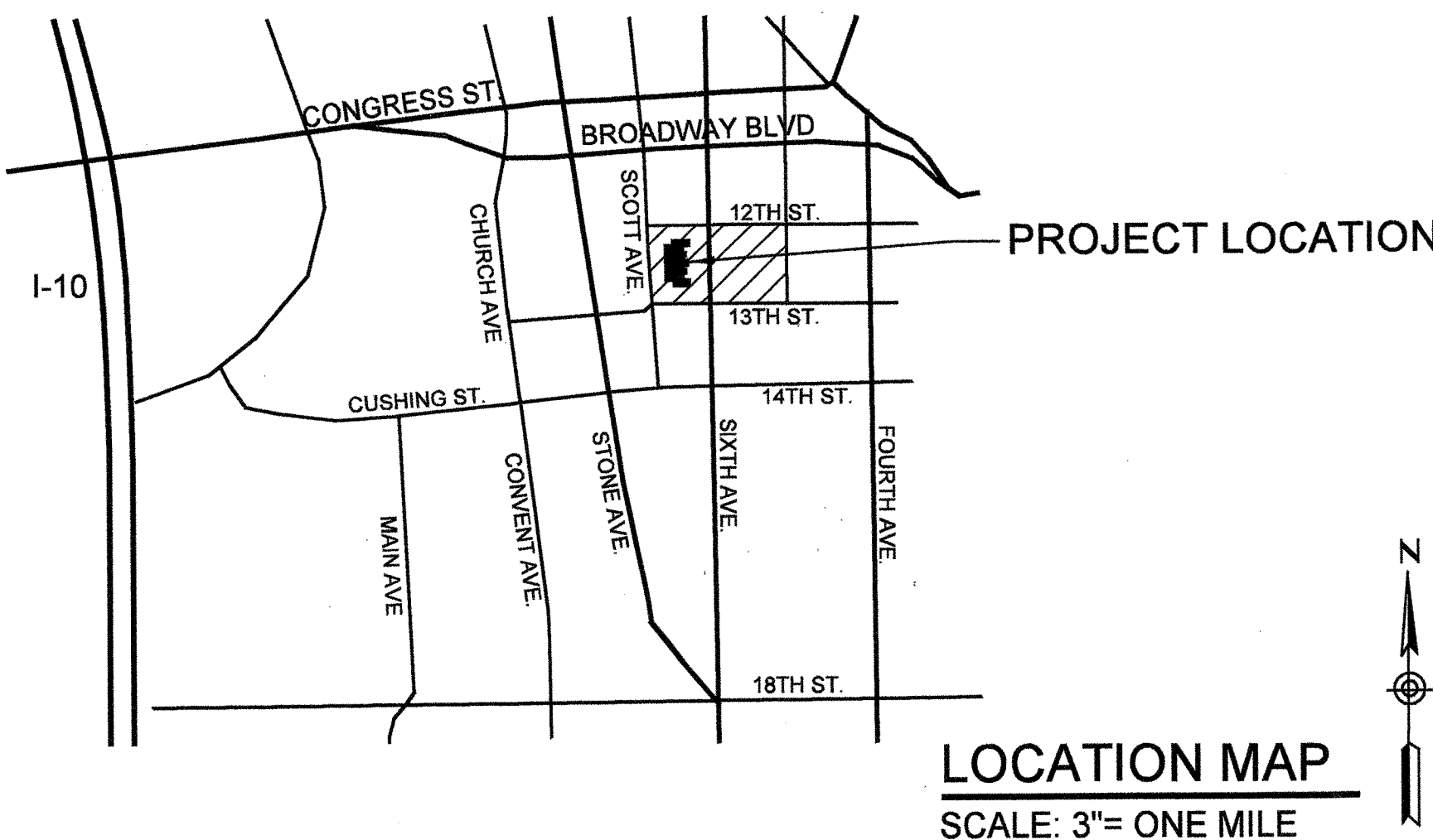


SITE IMPROVEMENTS FOR  
TUCSON CHILDREN'S MUSEUM  
IN ARMORY PARK  
200 SOUTH SIXTH AVENUE, TUCSON, ARIZONA



SHEET INDEX

LANDSCAPE

- 1 COVER SHEET
- 2 DEMOLITION PLAN
- 3 LAYOUT PLAN
- 4 CONSTRUCTION DETAILS
- 5 CONSTRUCTION DETAILS
- 6 PLANTING PLAN & DETAILS (ADD ALTERNATE 1)
- 7 IRRIGATION PLAN & DETAILS (ADD ALTERNATE 1)

ELECTRIC (ADD ALTERNATE 2)

- 1 LEGEND & ABBREVIATIONS
- 2 ELECTRICAL DEMOLITION PLAN
- 3 ELECTRICAL PLAN
- 4 ELECTRICAL CALCULATIONS
- 5 ELECTRICAL SPECIFICATIONS
- 6 ELECTRICAL SPECIFICATIONS


SCOPE OF WORK

BASE BID - WORK UNDER THE BASE BID CONSISTS OF PARTIAL REMOVAL OF THE LARGE BLOCK WALL IN FRONT OF THE MUSEUM AND COMPLETE REMOVAL OF THE LOW BATTERED WALL IN THE SAME AREA. A NEW, LOW RETAINING WALL IS TO BE CONSTRUCTED FROM BLOCK MATCHING THE EXISTING WALL WITH WROUGHT IRON FENCING AND GATES TO FORM A SECURITY BARRIER. THE EXISTING STAIRS ARE TO BE NARROWED AND H/C RAMPS AND PLANTERS WILL BE CONSTRUCTED FLANKING BOTH SIDES OF THE STAIRS.

ADD ALTERNATE 1 - THIS WORK CONSISTS OF INSTALLING CONCRETE HEADER, SHRUB PLANTING, DRIP IRRIGATION, AND DECOMPOSED GRANITE SURFACING.


ADD ALTERNATE 2 - THIS WORK CONSISTS OF INSTALLING TWO NEW LIGHT POLES AND FOOTINGS WITH LUMINAIRES AND CONTROL TIMER.

HISTORIC PRESERVATION ZONE CASE (HPZ 06-62)

  
DEPARTMENT OF PARKS AND RECREATION  
FRED GRAY, DIRECTOR

3/13/08  
DATE

APPROVED  
  
3-24-08  
Fire Prevention

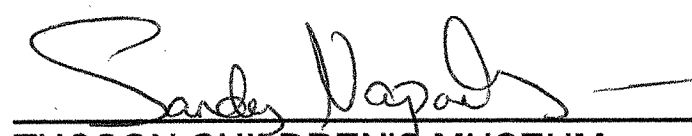
  
DEPARTMENT OF PARKS AND RECREATION  
PEG WEBER, NORTHWEST DISTRICT ADMINISTRATOR

3/11/08  
DATE

APPROVED PLANS  
MUST BE KEPT ON  
JOB AT ALL TIMES  
Development Services Department

  
DEPARTMENT OF PARKS AND RECREATION  
HOWARD DUTT, PROJECT MANAGER

3/11/08  
DATE

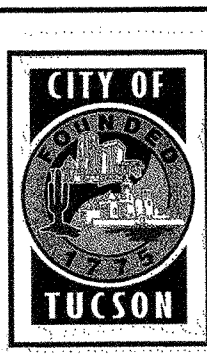
  
TUCSON CHILDREN'S MUSEUM  
SANDY NAPOMBEJRA, EXECUTIVE DIRECTOR

3/11/08  
DATE

APPROVED  
This set of plans and specifications MUST be at job site during construction. It is unlawful to alter or change same, or deviate therefrom, without written approval from the Development Services Department.  
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Electrical:  Date: 3-24-08  
Mechanical:  Date:   
Plumbing:  Date:   
DEVELOPMENT SERVICES DEPARTMENT,  
CITY OF TUCSON



WHEAT SCHARF ASSOCIATES  
LANDSCAPE ARCHITECTURE - RESOURCE PLANNING - URBAN DESIGN  
448 NORTH SIXTH AVENUE TUCSON AZ. 85708  
PHONE 520-684-7911 520-684-7912 FAX



City of Tucson, Parks and Recreation Department  
ARMORY PARK/TUCSON CHILDREN'S MUSEUM

1  
of  
7

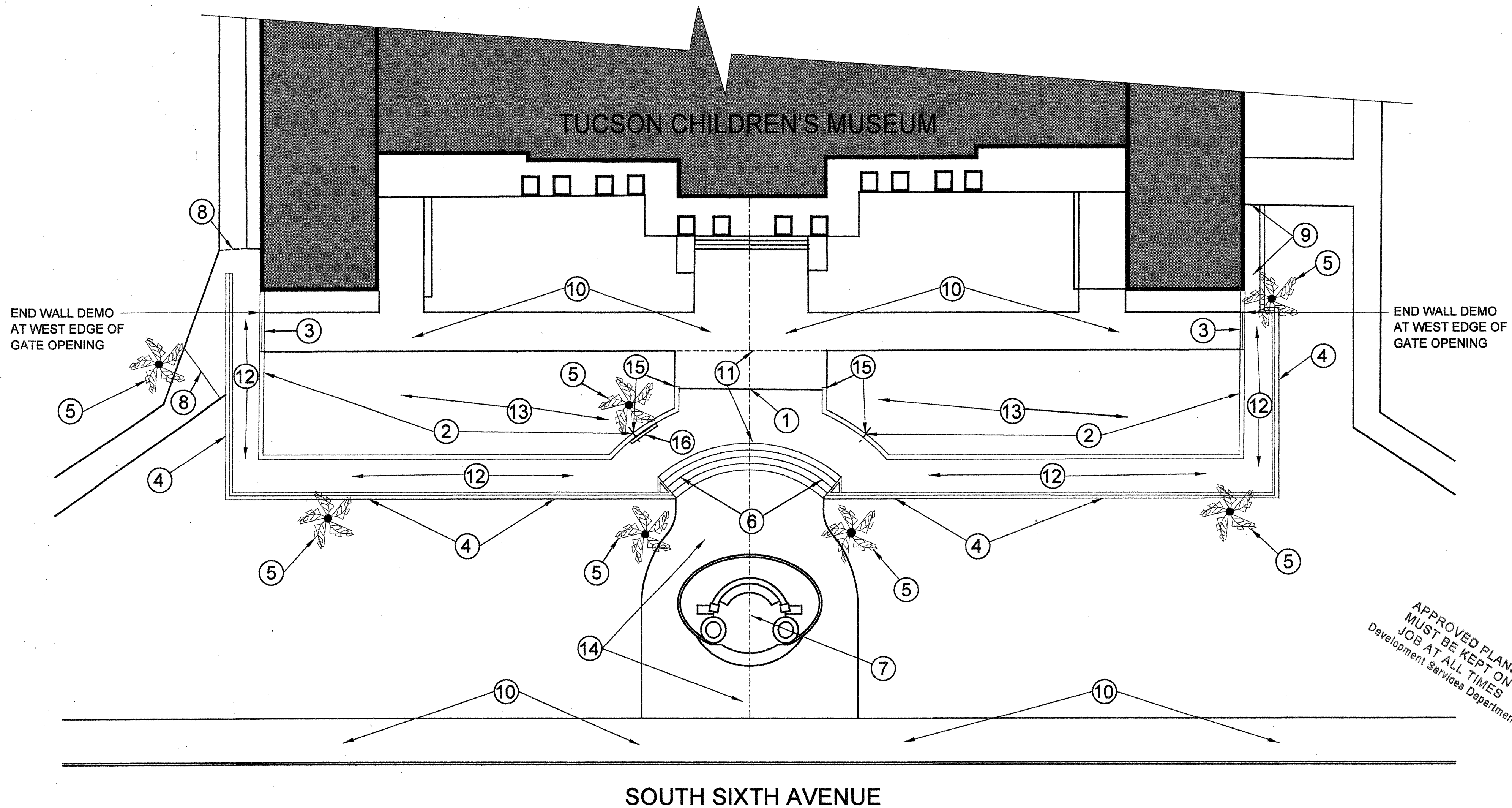
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			CHECKED BY: ES	

APPD BY: _____	20	REF: _____	SCALE: _____
APPD BY: _____	20	PLAN NO.	

COVER SHEET

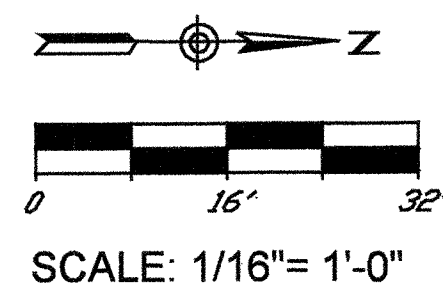
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## KEYNOTES:

- ① REMOVE EXISTING METAL GATES. GATES ARE TO REMAIN PROPERTY OF THE CITY OF TUCSON. DELIVER TO LOCATION TO BE DETERMINED. REFER TO ELECTRICAL DEMOLITION PLAN.
- ② DEMOLISH BLOCK WALL TO A LEVEL MINIMUM 12" BELOW PROPOSED FINISH GRADE. REFER TO KEYNOTE 15.
- ③ REMOVE EXISTING GATE AND WALL ABOVE. BLOCK WALL REMAINS IN PLACE FROM WEST EDGE OF GATE OPENING.
- ④ COMPLETELY REMOVE BATTERED CONCRETE WALL AND FOOTINGS.
- ⑤ PRESERVE EXISTING PALM TREE IN PLACE. FENCE ROOT ZONE TO THE EXTENT POSSIBLE. COORDINATE WITH THE LANDSCAPE ARCHITECT.
- ⑥ SAW CUT EACH END OF THE EXISTING STAIRS AS NEEDED. REFER TO LAYOUT PLAN, SHEET 3. REMOVE THREE (3) EXISTING HANDRAILS.
- ⑦ EXISTING MEMORIAL REMAINS IN PLACE. THIS MEMORIAL IS HISTORICALLY SIGNIFICANT AND MUST BE CAREFULLY PROTECTED TO PREVENT DAMAGE DURING CONSTRUCTION ACTIVITIES. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE THAT OCCURS DURING CONSTRUCTION.
- ⑧ SAW CUT EXISTING CONCRETE SIDEWALK AT NEAREST EXPANSION OR CONSTRUCTION JOINT TO ALLOW FOR DEMOLITION AND NEW CONSTRUCTION.
- ⑨ SAW CUT AT BOTTOM OF RAMP IF NEEDED. REMOVE H/C ACCESS RAMP AND BATTERED WALL AND FOOTINGS. REPAIR EXPOSED FACE OF BLOCK WALL AND PAINT TO MATCH EXISTING.
- ⑩ CONCRETE SIDEWALK REMAINS IN PLACE.
- ⑪ SAW CUT CONCRETE SIDEWALK AS NEEDED AND REMOVE BETWEEN LINE SHOWN AND EXISTING STAIRS TO THE EAST. REFER TO KEYNOTE 12.
- ⑫ REMOVE ALL CONCRETE SIDEWALK BETWEEN TWO EXISTING WALLS. REFER TO KEYNOTE 11.
- ⑬ MOST VEGETATION INSIDE THE EXISTING BLOCK WALL IS TO BE PRESERVED IN PLACE. A SMALL NUMBER OF SMALL SHRUBS (MAX. 3) ARE TO BE SELECTIVELY REMOVED. FENCE THE ROOT ZONES TO THE EXTENT POSSIBLE. COORDINATE WITH THE LANDSCAPE ARCHITECT.
- ⑭ REMOVE CONCRETE SIDEWALK BETWEEN STAIRS AND 6TH AVE. SIDEWALK AND UP TO MEMORIAL PERIMETER CURBING. REFER TO NOTE 7.
- ⑮ REMOVE THE BLOCK WALL ENTIRELY INCLUDING FOOTINGS AS NECESSARY TO CONSTRUCT NEW WALL (BOTH SIDES NEAR ENTRY GATES). REFER TO KEYNOTE 2.
- ⑯ REMOVE EXISTING BULLETIN BOARD AND STORE FOR RE-INSTALLATION AFTER FENCE CONSTRUCTION IS COMPLETE. REFER TO LAYOUT PLAN, SHEET 3



SCALE: 1/16"= 1'-0"

**NOTE:**  
SAFE ACCESS TO THE MUSEUM MUST BE MAINTAINED DURING OPEN HOURS. DEMOLITION AND CONSTRUCTION SHALL BE PHASED TO ALLOW VISITOR ACCESS. CONTRACTOR SHALL COORDINATE SEQUENCING OF THE WORK WITH THE MUSEUM STAFF.

CITY OF TUCSON  
DSD / ZONING APPROVAL  
Site Plan ☐ Grading Plan ☐ Wall ☐  
Lot Split ☐ Sign ☐ HPZ ☒  
SCZ ☐ Other ☒ 1472-06-62  
Additional comments as noted  
15 Feb 08 14 MAR 08

CITY OF TUCSON  
DSD / ZONING APPROVAL  
Site Plan ☐ Grading Plan ☐ Wall ☐  
Lot Split ☐ Sign ☐ HPZ ☒  
SCZ ☒ Other ☒ Demo Existing Site Walls  
Additional comments as noted  
H03  
Construct new wall

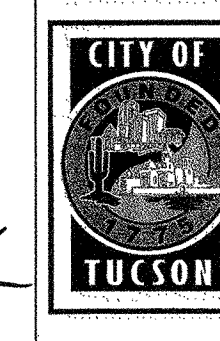
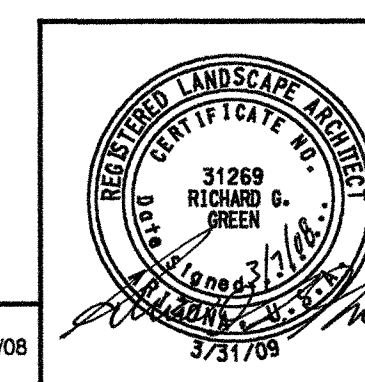
**APPROVED**  
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Structural: For Date: 21 MAR 08  
Electrical: \_\_\_\_\_ Date: \_\_\_\_\_  
Mechanical: \_\_\_\_\_ Date: \_\_\_\_\_  
Plumbing: \_\_\_\_\_ Date: \_\_\_\_\_  
DEVELOPMENT SERVICES DEPARTMENT,  
CITY OF TUCSON

City of Tucson  
**ENGINEERING APPROVAL**  
HPZ ☒ SVI ☐ OTHER ☐  
by: Richard G. Green date: 21 MAR 08  
To: SCM 00 927  
Remove portion of existing wall and replace with retaining wall & wrought iron



**WHEAT SCHARF ASSOCIATES**  
LANDSCAPE ARCHITECTURE - RESOURCE PLANNING - URBAN DESIGN  
448 NORTH SIXTH AVENUE TUCSON, AZ. 85705  
PHONE 520-984-7911 520-984-7915 FAX

REV. NO.	REV. DATE	REVISION	DRAWN BY: RGG	CHECKED BY: ES	1/21/08
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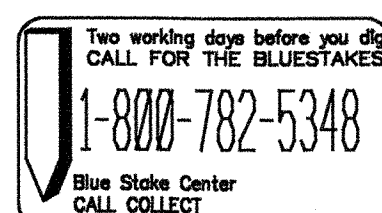


City of Tucson, Parks and Recreation Department  
**ARMORY PARK/TUCSON CHILDREN'S MUSEUM**

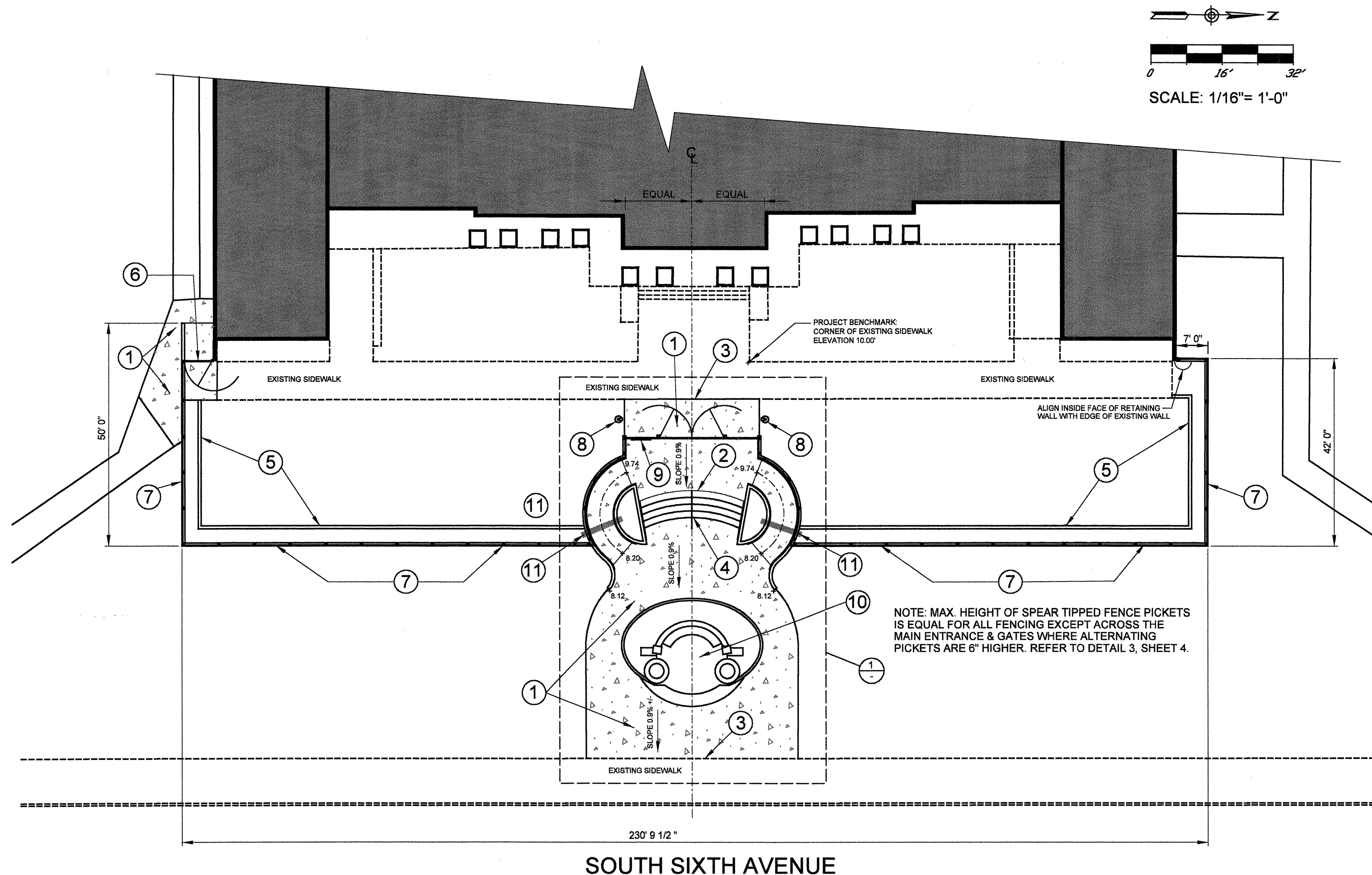
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APPD BY: \_\_\_\_\_ 20 \_\_\_\_\_  
PLAN NO.

DEMOLITION PLAN

2  
of  
7







SOUTH SIXTH AVENUE

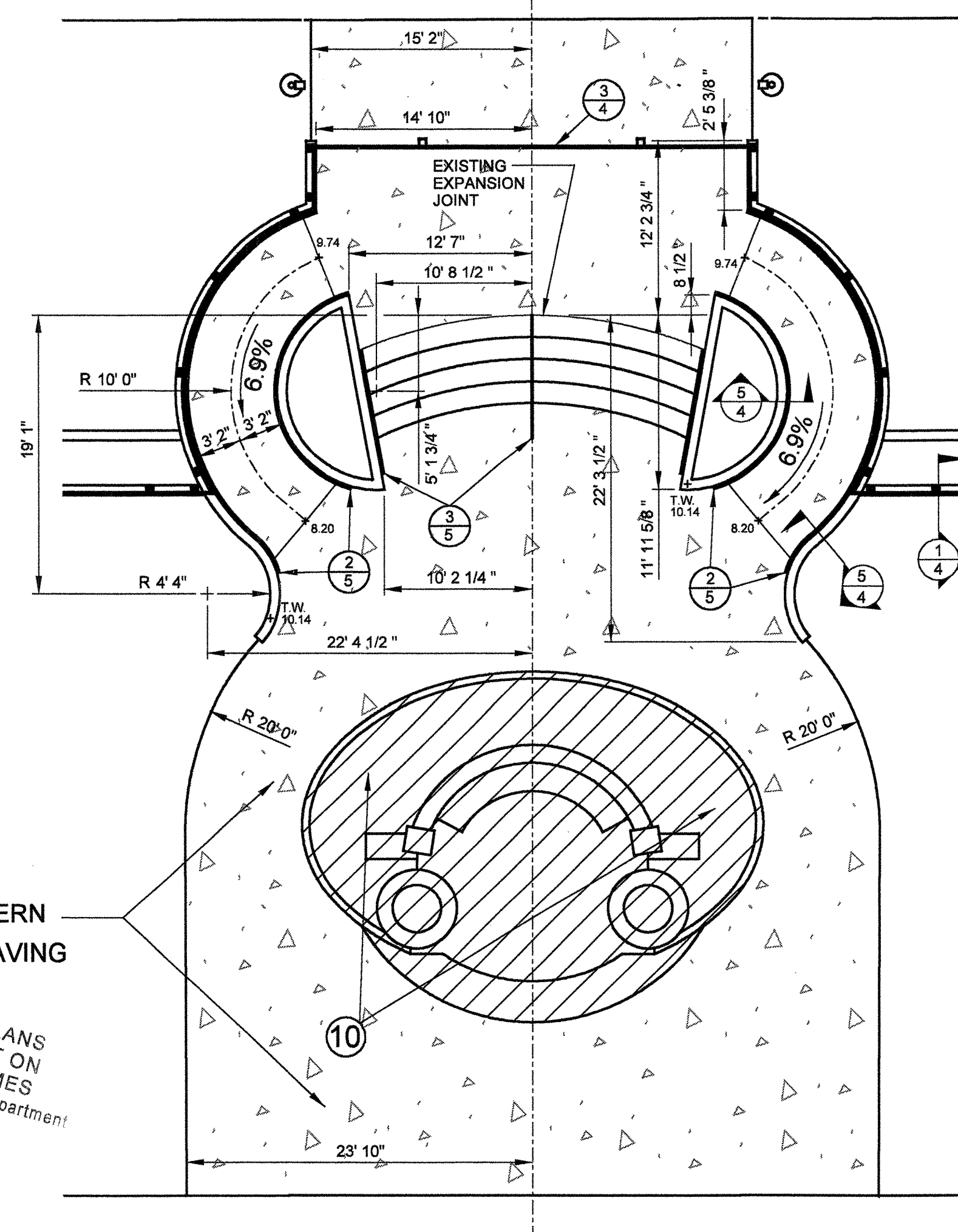
# KEYNOTES:

- 1 NEW CONCRETE PAVING. REFER TO DETAIL 3, SHEET 4. MATCH GRADES OF ADJACENT EXISTING PAVING. REMOVE EXISTING JOINT MATERIAL AND REPLACE AS NEEDED.
- 2 EXISTING EXPANSION JOINT - MATCH GRADE OF NEW PAVING TO TOP OF STAIRS. REMOVE EXISTING JOINT MATERIAL AND REPLACE WITH NEW.
- 3 MATCH GRADE OF SURFACE OF NEW PAVING TO EXISTING
- 4 MATCH PAVING TO PREVIOUS ELEVATION - INSURE BOTTOM RISER HEIGHT EQUALS UPPER RISERS. REMOVE AND REPLACE JOINT MATERIAL.
- 5 NEW CONCRETE HEADER. REFER TO DETAIL 4, SHEET 5. (ADD ALTERNATE 1)
- 6 NEW SERVICE ENTRY GATE. REFER TO DETAIL 4, SHEET 4.
- 7 NEW CONCRETE FOOTING/CMU BLOCK RETAINING WALL WITH WROUGHT IRON FENCE ON TOP. REFER TO DETAIL 1, 2, & 3, SHEET 4.
- 8 ADD ALTERNATE #2 - NEW CONCRETE FOOTING, LIGHT POLE & FIXTURE WIRED INTO EXISTING ELECTRICAL SYSTEM. REFER TO DETAIL 6, SHEET 4.
- 9 MOUNT SALVAGED BULLETIN BOARD ON STATIONARY SECTION OF NEW FENCE. METHOD OF ATTACHMENT TO BE FIELD DETERMINED.
- 10 EXISTING HISTORIC MEMORIAL MUST BE CAREFULLY PROTECTED DURING ALL CONSTRUCTION ACTIVITIES. REFER TO NOTE 7, SHEET 2.
- 11 3" SCH. 40 PVC SLEEVE, EXTEND MIN. 1' BEYOND WALLS. REFER TO IRRIGATION PLAN, SHEET 7.

CITY OF TUCSON  
USD / ZONING APPROVAL  
Site Plan Grading Plan Wall  
Lot Split Sign HPZ  
SCZ Other  
Additional comments as noted  
7/5/08 14 min 08

REPLICATE SCORING PATTERN  
OF EXISTING CONCRETE PAVING

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Structural: Date: 11/11/08  
Electrical: Date: 11/11/08  
Mechanical: Date: 11/11/08  
Plumbing: Date: 11/11/08  
DEVELOPMENT SERVICES DEPARTMENT,  
CITY OF TUCSON



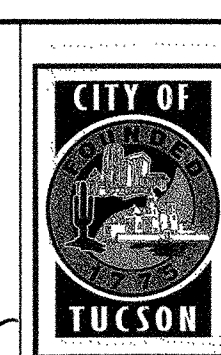
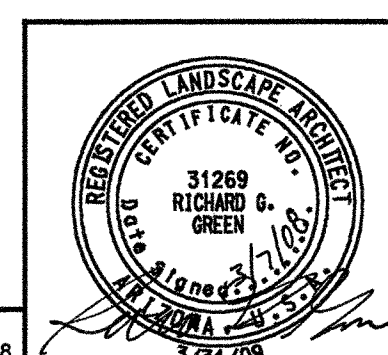
NOTE: ALL DIMENSIONS SYMMETRICAL EITHER  
SIDE OF CENTER LINE.

## 1 FRONT STAIR AREA LAYOUT PLAN

1/8" = 1'-0"



WHEAT SCHARF ASSOCIATES  
LANDSCAPE ARCHITECTURE - RESOURCE PLANNING - URBAN DESIGN  
448 NORTH SIXTH AVENUE TUCSON AZ. 85708  
PHONE 520-684-7211 520-684-7212 FAX



City of Tucson, Parks and Recreation Department  
ARMORY PARK/TUCSON CHILDREN'S MUSEUM

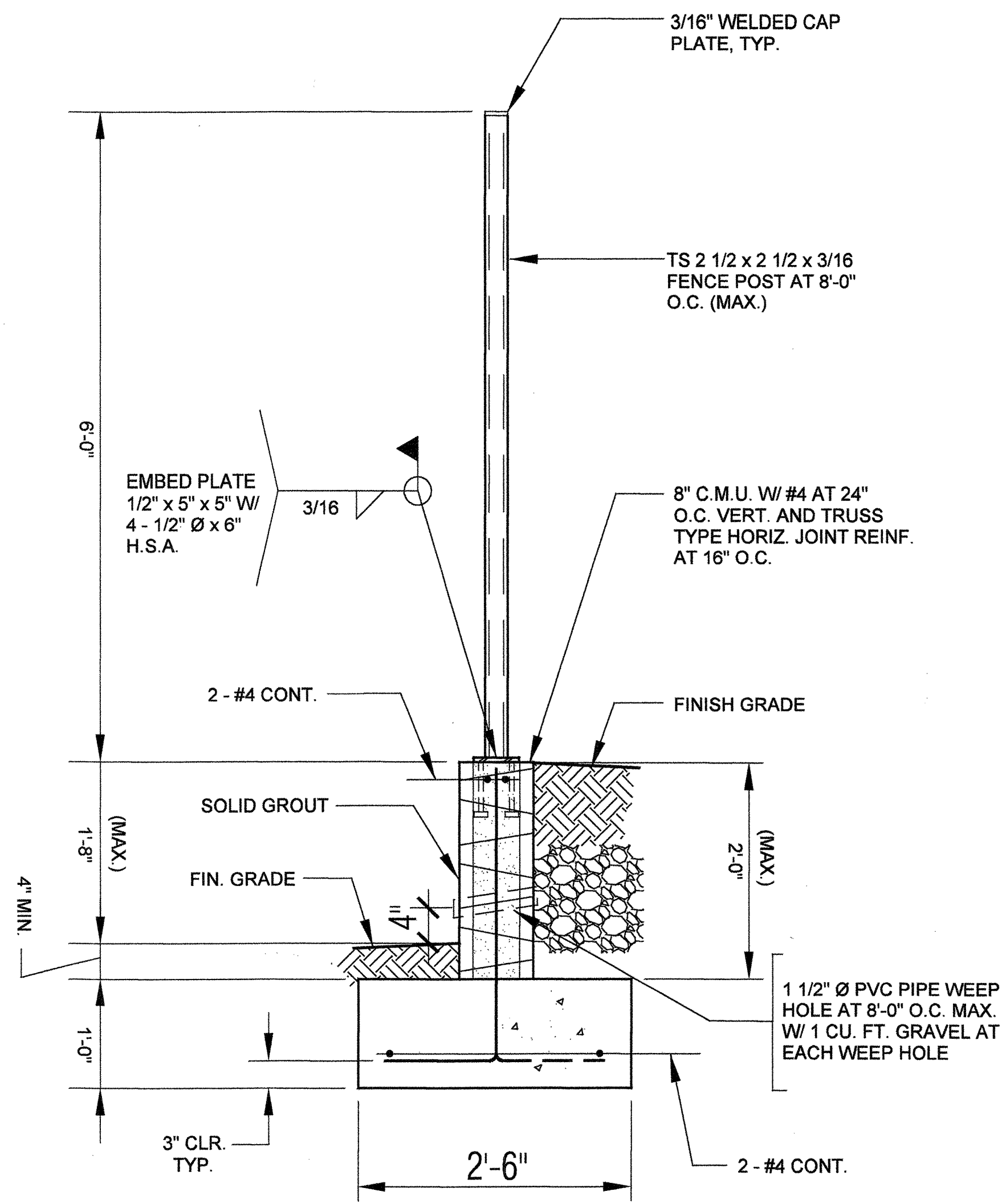
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of  
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REV. NO.	REV. DATE	REVISION	CHECKED BY	DATE

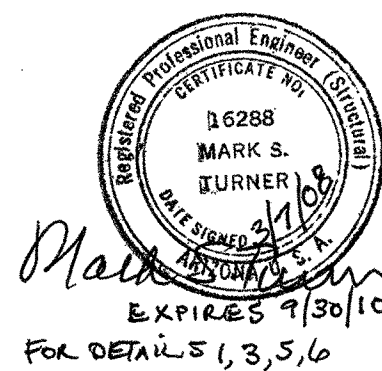
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APPD BY	20	PLAN NO.	

LAYOUT PLAN



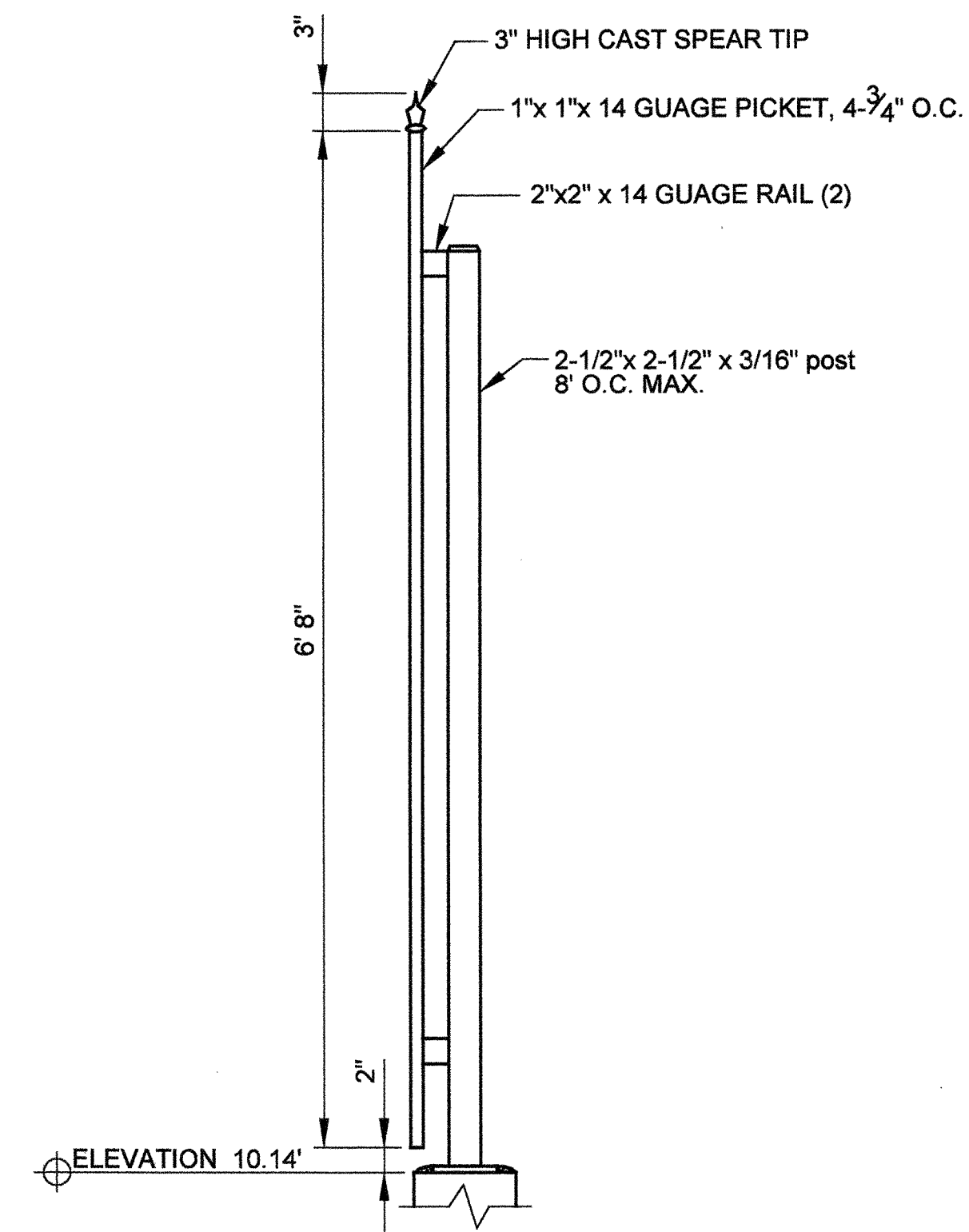


MATERIAL OF CONSTRUCTION	
CONCRETE	fc 2500 PS.I. AT 28 DAYS
C.M.U.	fm 1500 PS.I.
GROUT	2000 PS.I. AT 28 DAYS
MORTAR	1800 PS.I. AT 28 DAYS
REBAR	ASTM A-615, GRADE 60

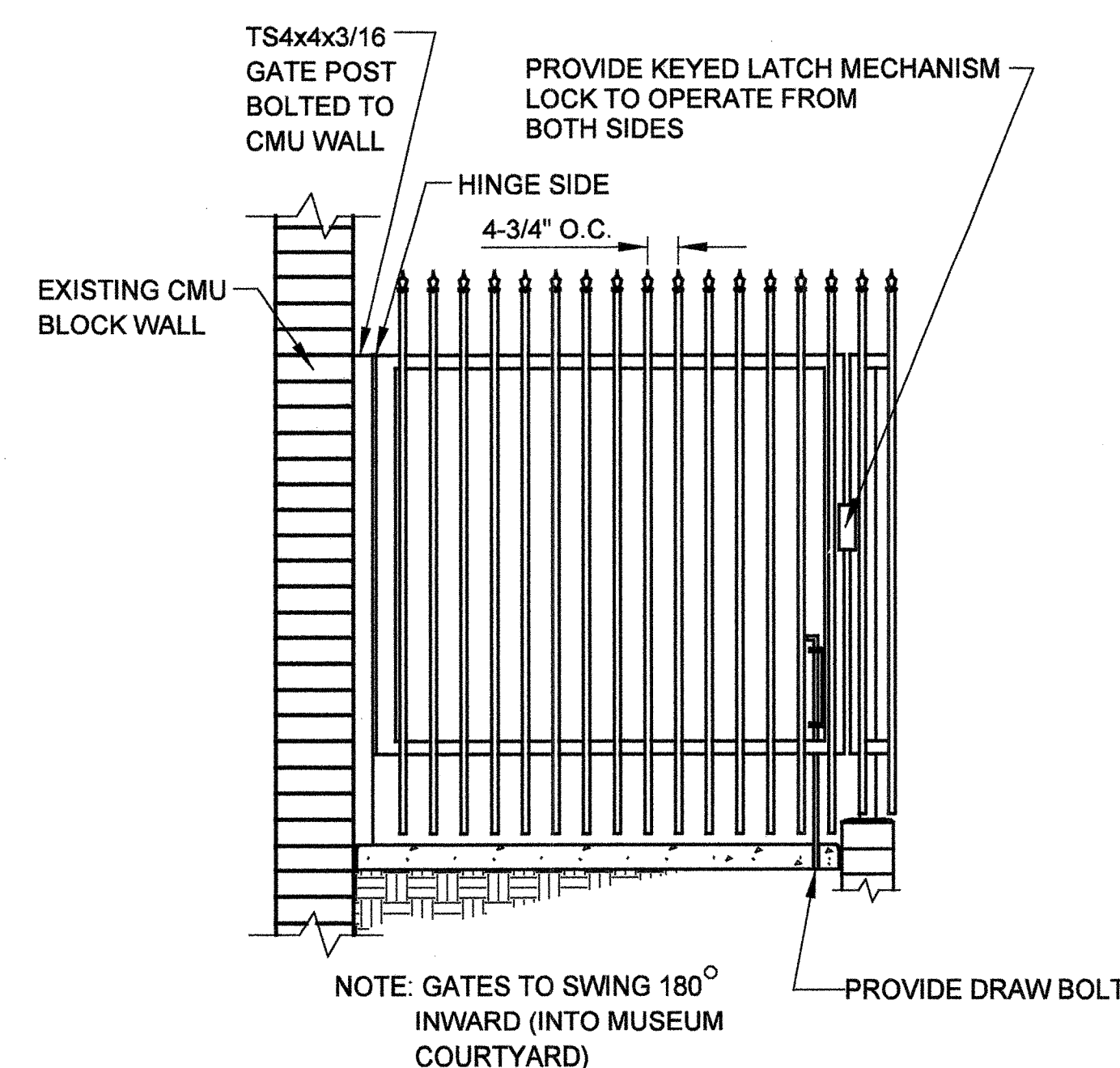


**TURNER STRUCTURAL ENGINEERING COMPANY**  
3028 N. Country Club Tucson Arizona, 85716 • (520) 323-3422

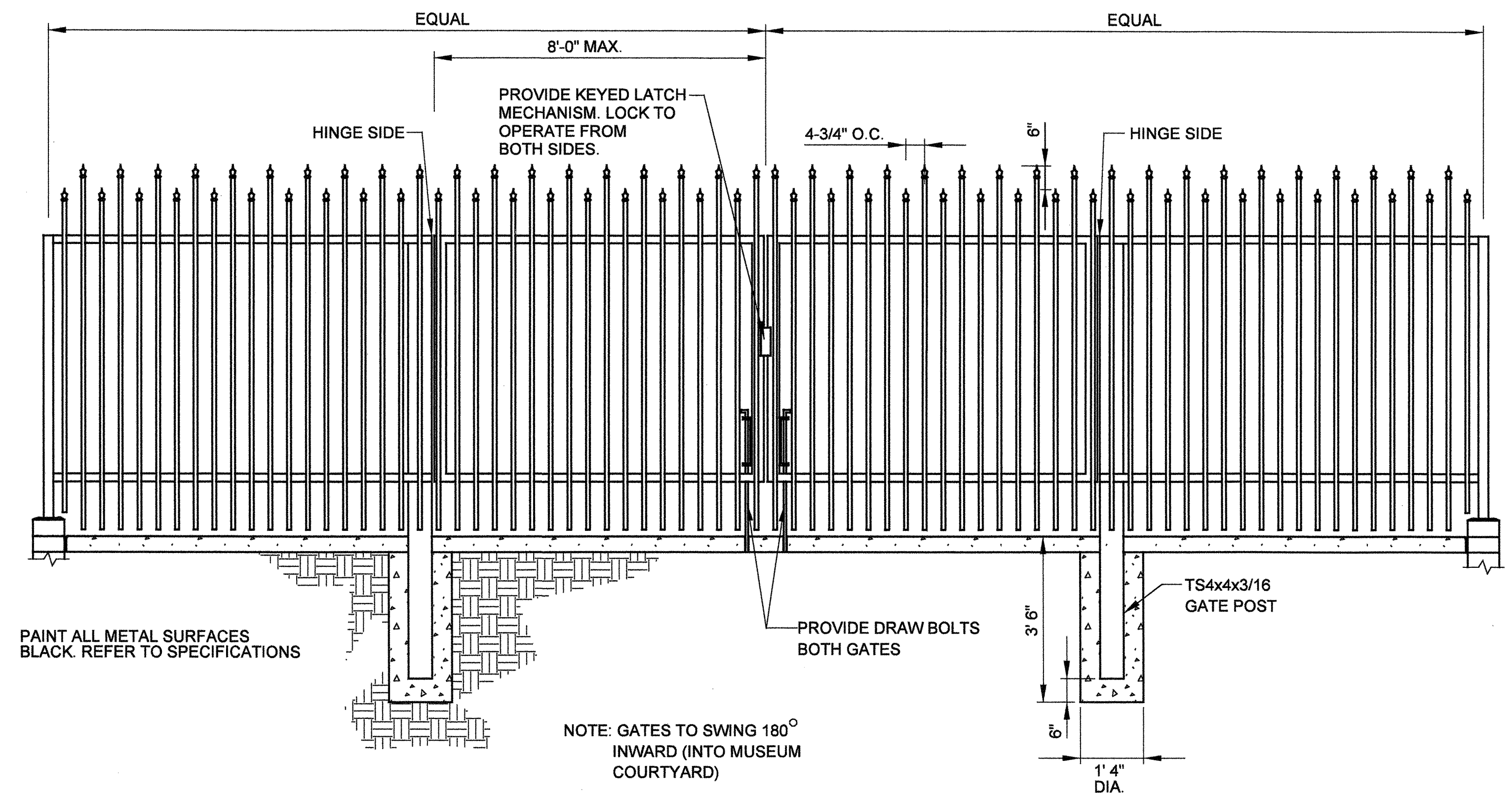
**1** TYPICAL C.M.U. SITE WALL  
SECTION SCALE: 1"= 1'-0"



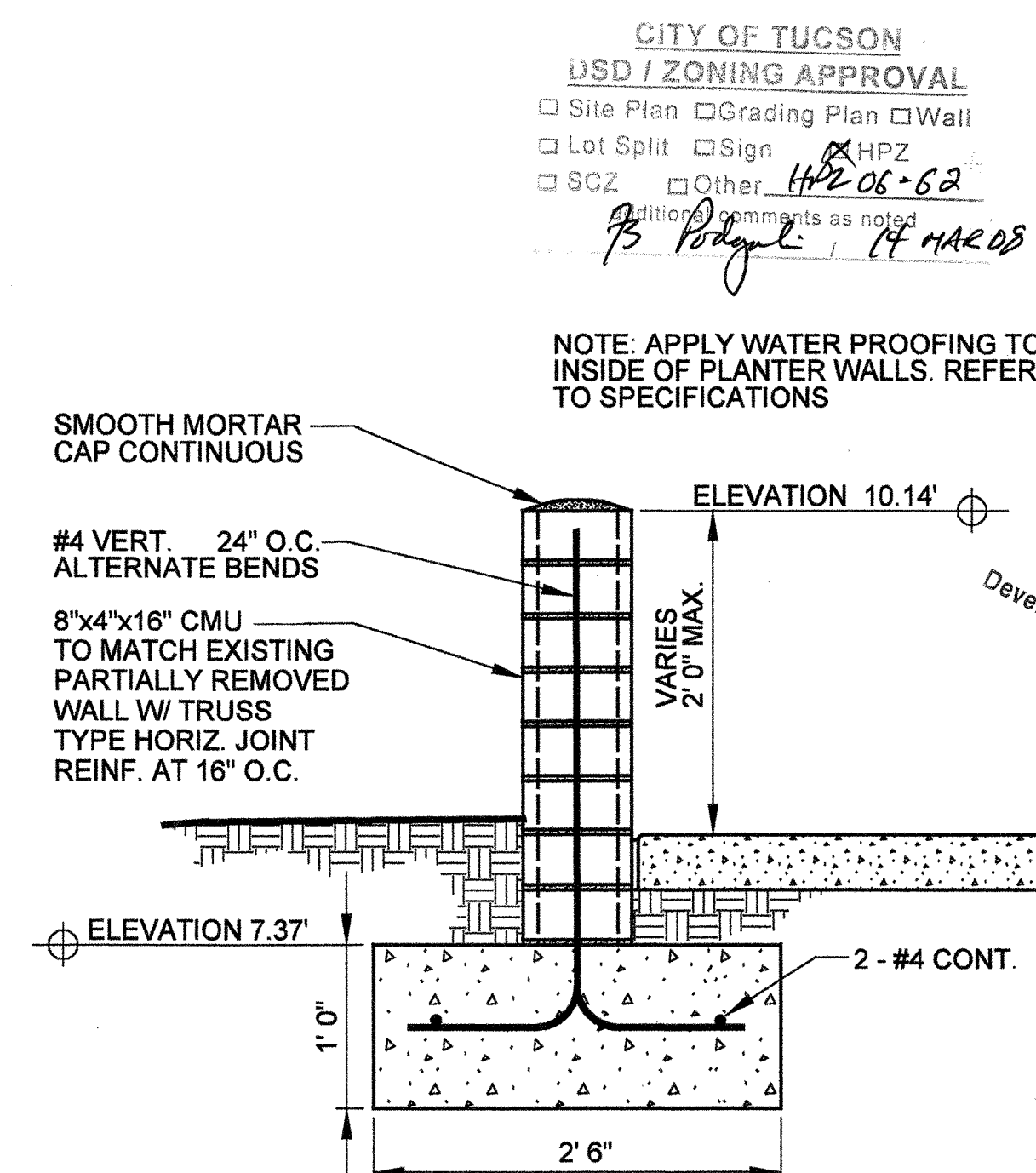
**2** WROUGHT IRON FENCE  
SECTION SCALE: 1"= 1'-0"



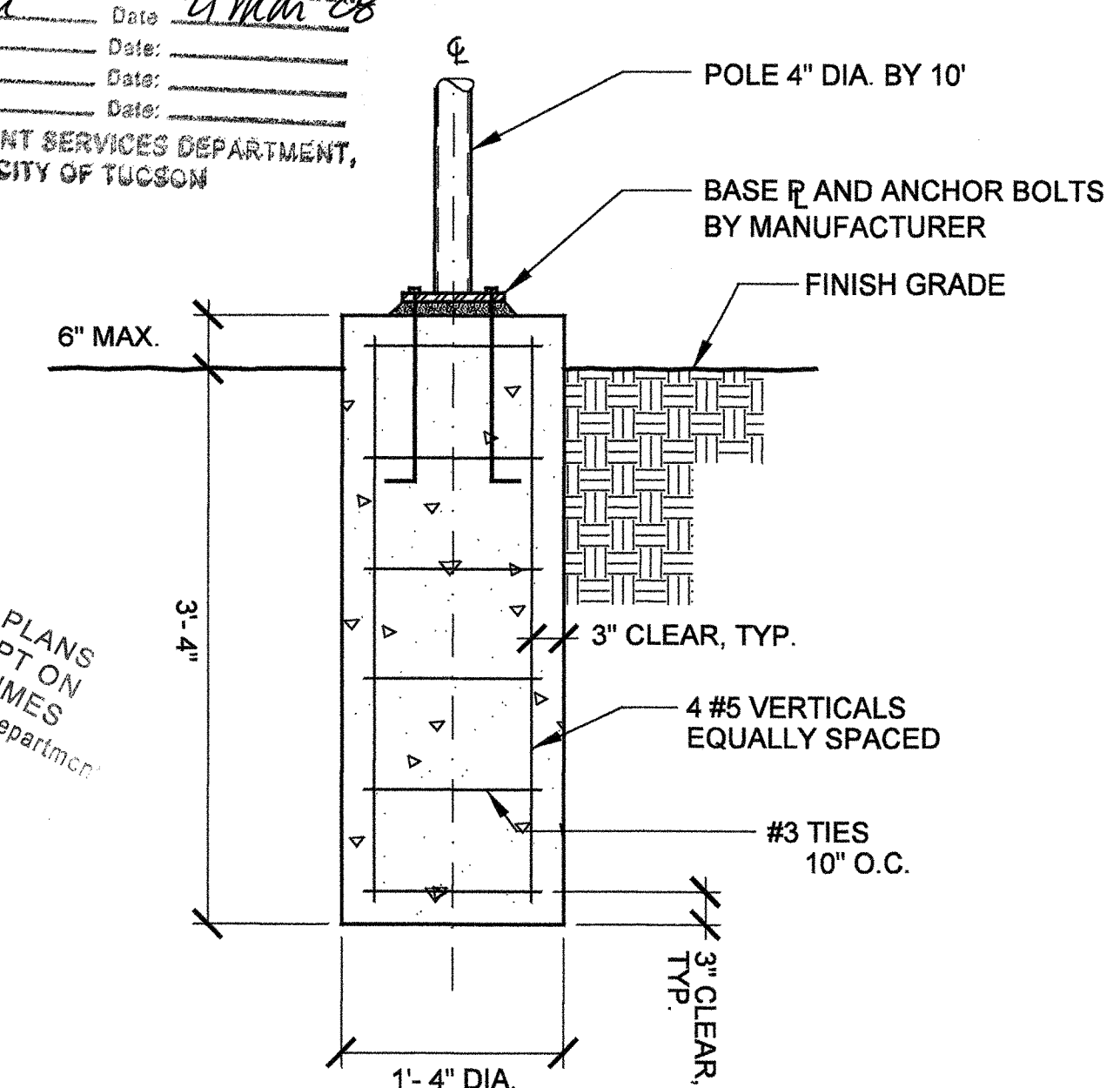
**4** SERVICE ENTRY GATE  
ELEVATION SCALE: 1/2"= 1'-0"



**3** FRONT ENTRY GATES  
ELEVATION SCALE: 1/2"= 1'-0"



**5** WING WALLS/PLANTER WALLS  
SECTION SCALE: 1"= 1'-0"



**6** FOUNDATION FOR 10' LIGHT POLE  
ADD ALTERNATE #2  
SECTION SCALE: 1"= 1'-0"

CITY OF TUCSON  
DSD / ZONING APPROVAL

☐ Site Plan ☐ Grading Plan ☐ Wall  
☐ Lot Split ☐ Sign ☒ HPZ  
☐ SCZ ☐ Other ☒ Comments as noted

APPROVED  
DATE: 11/14/08  
BY: [Signature]

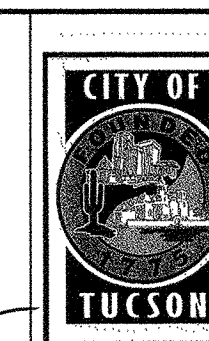
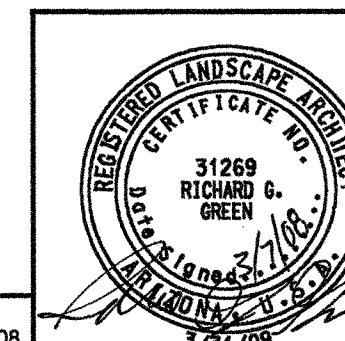
NOTE: APPLY WATER PROOFING TO INSIDE OF PLANTER WALLS. REFER TO SPECIFICATIONS

APPROVED  
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Structural: [Signature] Date: 11/14/08  
Electrical: [Signature] Date: [Signature]  
Mechanical: [Signature] Date: [Signature]  
Plumbing: [Signature] Date: [Signature]  
DEVELOPMENT SERVICES DEPARTMENT, CITY OF TUCSON

APPROVED PLANS  
MUST BE KEPT ON  
JOB AT ALL TIMES  
Development Services Department

Two working days before you dig  
CALL FOR THE BLUESTAKES  
1-800-782-5348  
Blue Stake Center  
CALL COLLECT

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PHONE 520-684-7911 FAX 520-684-7912

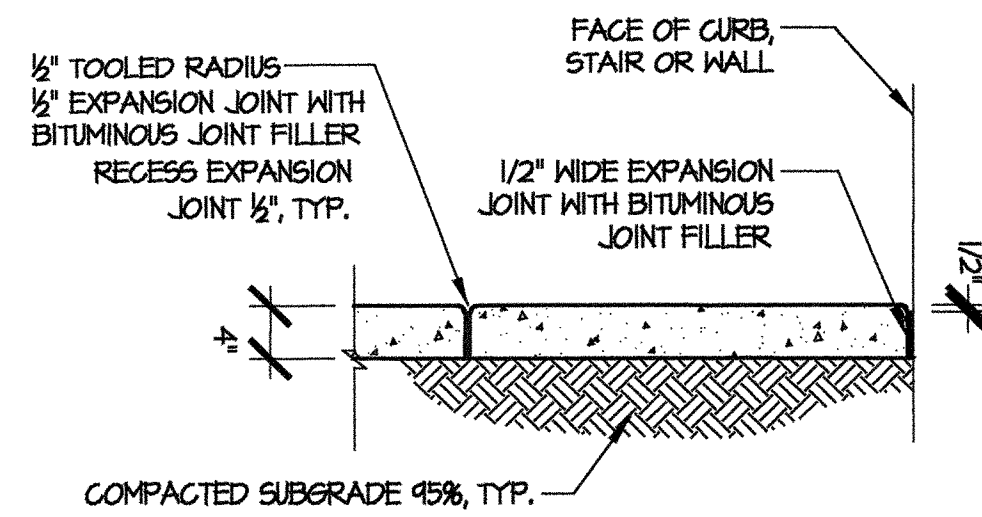


City of Tucson, Parks and Recreation Department  
**ARMORY PARK/TUCSON CHILDREN'S MUSEUM**

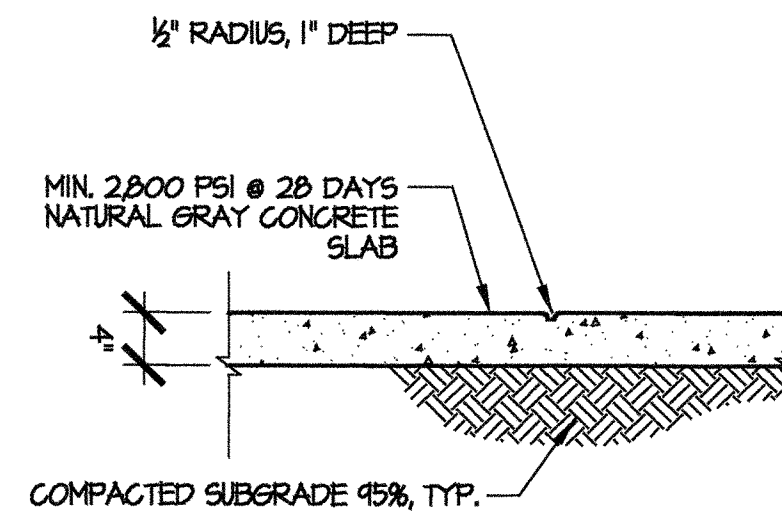
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APPD BY: [Signature] 20  
REF: [Signature] SCALE: [Signature]  
PLAN NO.

CONSTRUCTION  
DETAILS





EXPANSION JOINT

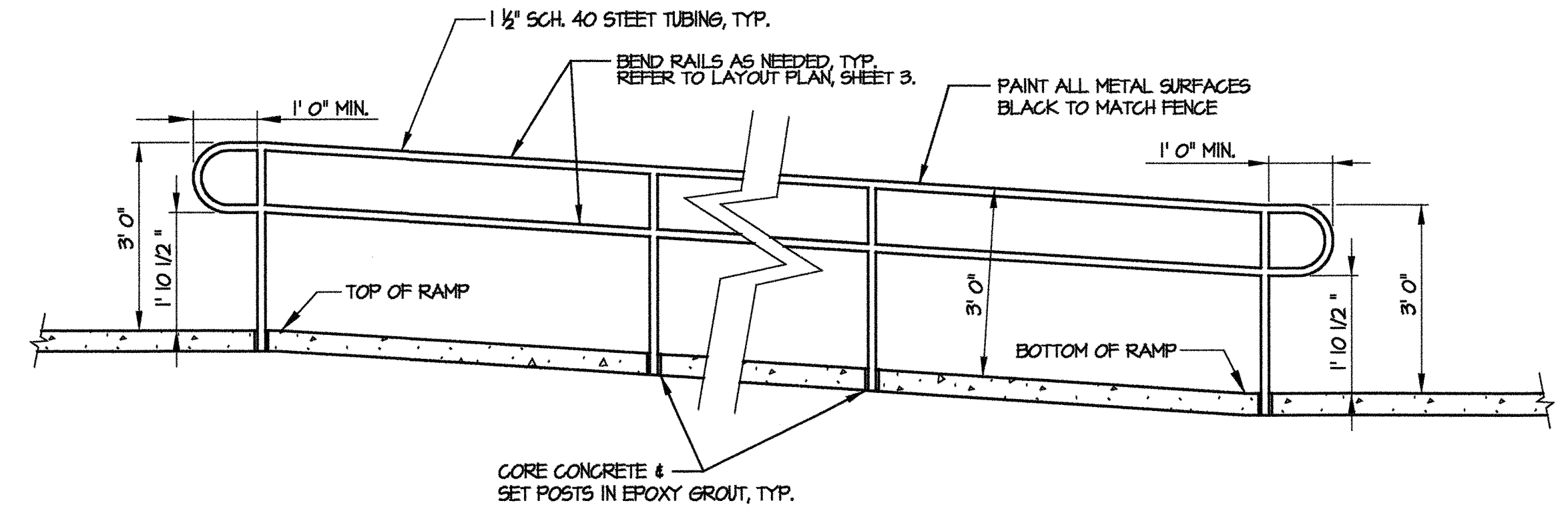


CONTROL JOINT

- NOTES:
1. Refer to hardscape drawings for pavement joint locations.
  2. All concrete walks to have a minimum cross slope of 1/8" per ft. And a maximum cross slope of 1/4" per ft. unless otherwise specified on plan.
  3. Expansion joints shall be set between sidewalks and all abutting structures and at all existing conditions. Maximum length of sidewalk without expansion shall be 60 linear feet.

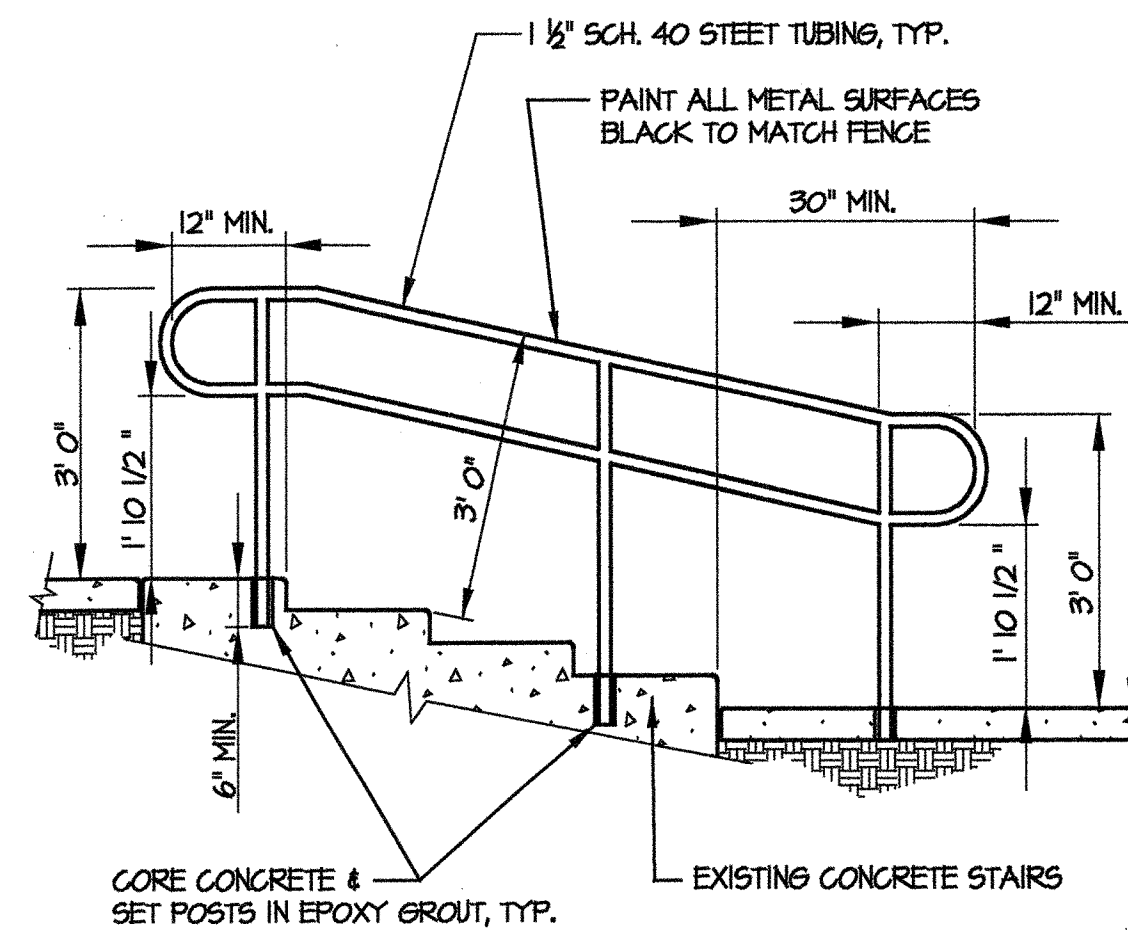
1 TYPICAL CONCRETE PAVING JOINTS  
SECTION

NTS



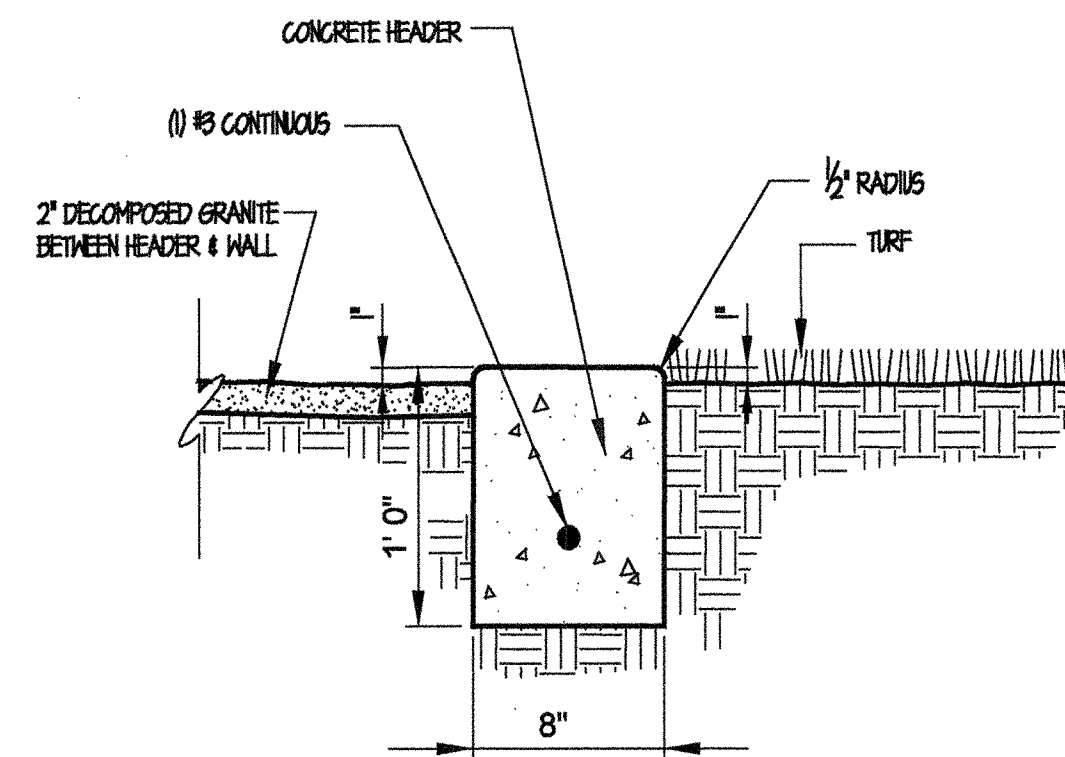
2 H/C RAMP HANDRAILS  
ELEVATION

SCALE: 1/2" = 1'-0"



3 FRONT STEPS HANDRAILS  
ELEVATION

SCALE: 1/2" = 1'-0"



4 CONCRETE HEADER - ADD ALTERNATE 1  
SECTION

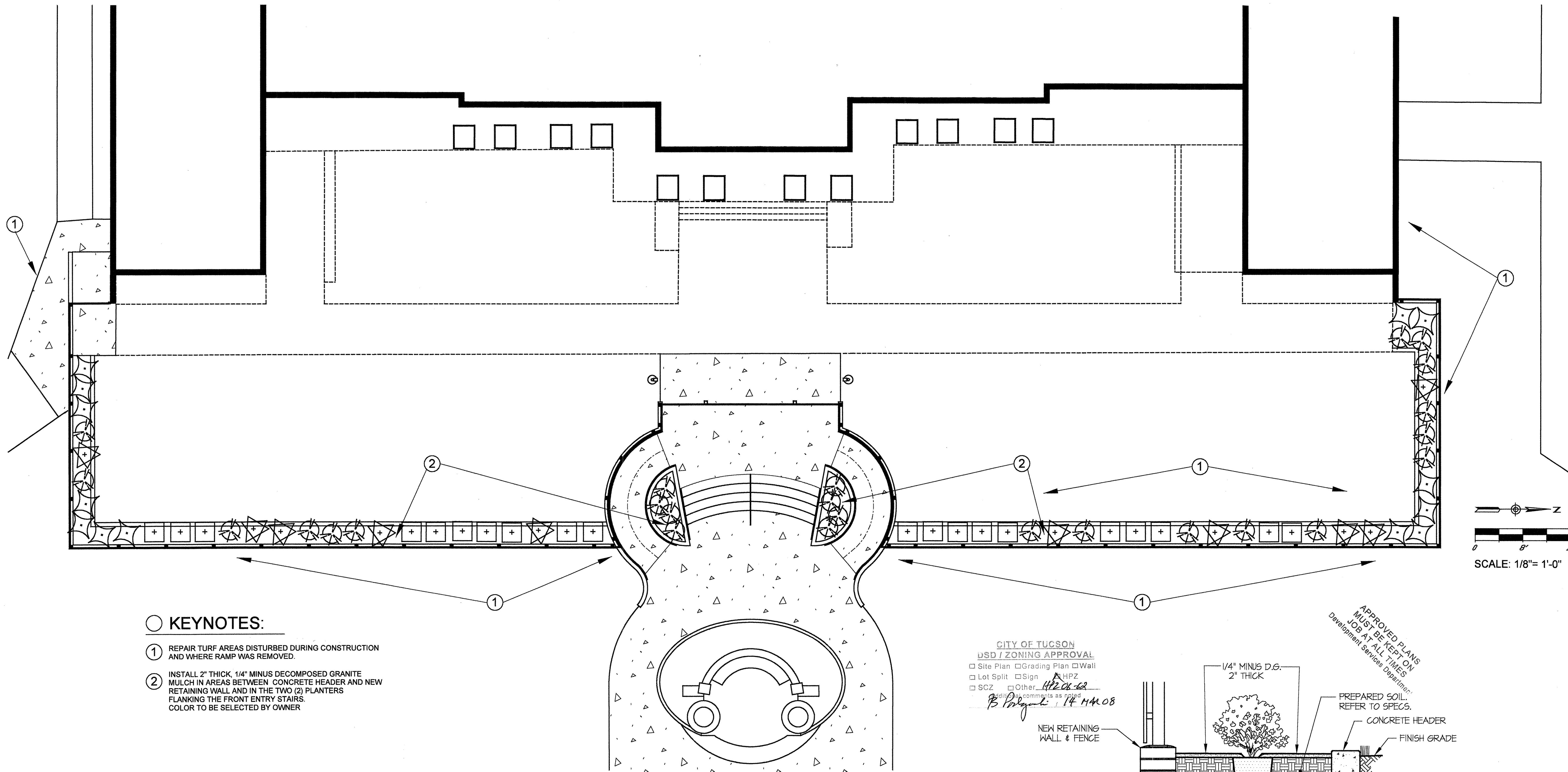
NTS

CITY OF TUCSON  
DSD / ZONING APPROVAL  
Site Plan ☐ Grading Plan ☐ Wall ☐  
Lot Split ☐ Sign ☐ HPZ ☒  
SCZ ☐ Other ☒ HPZ 06-12  
Additional comments as noted  
B. B. B. 14 MAR 08

APPROVED PLANS  
MUST BE KEPT ON  
JOB AT ALL TIMES  
Development Services Department

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Structural: *[Signature]* Date: *21 Mar 08*  
Electrical: \_\_\_\_\_ Date: \_\_\_\_\_  
Mechanical: \_\_\_\_\_ Date: \_\_\_\_\_  
Plumbing: \_\_\_\_\_ Date: \_\_\_\_\_  
DEVELOPMENT SERVICES DEPARTMENT,  
CITY OF TUCSON



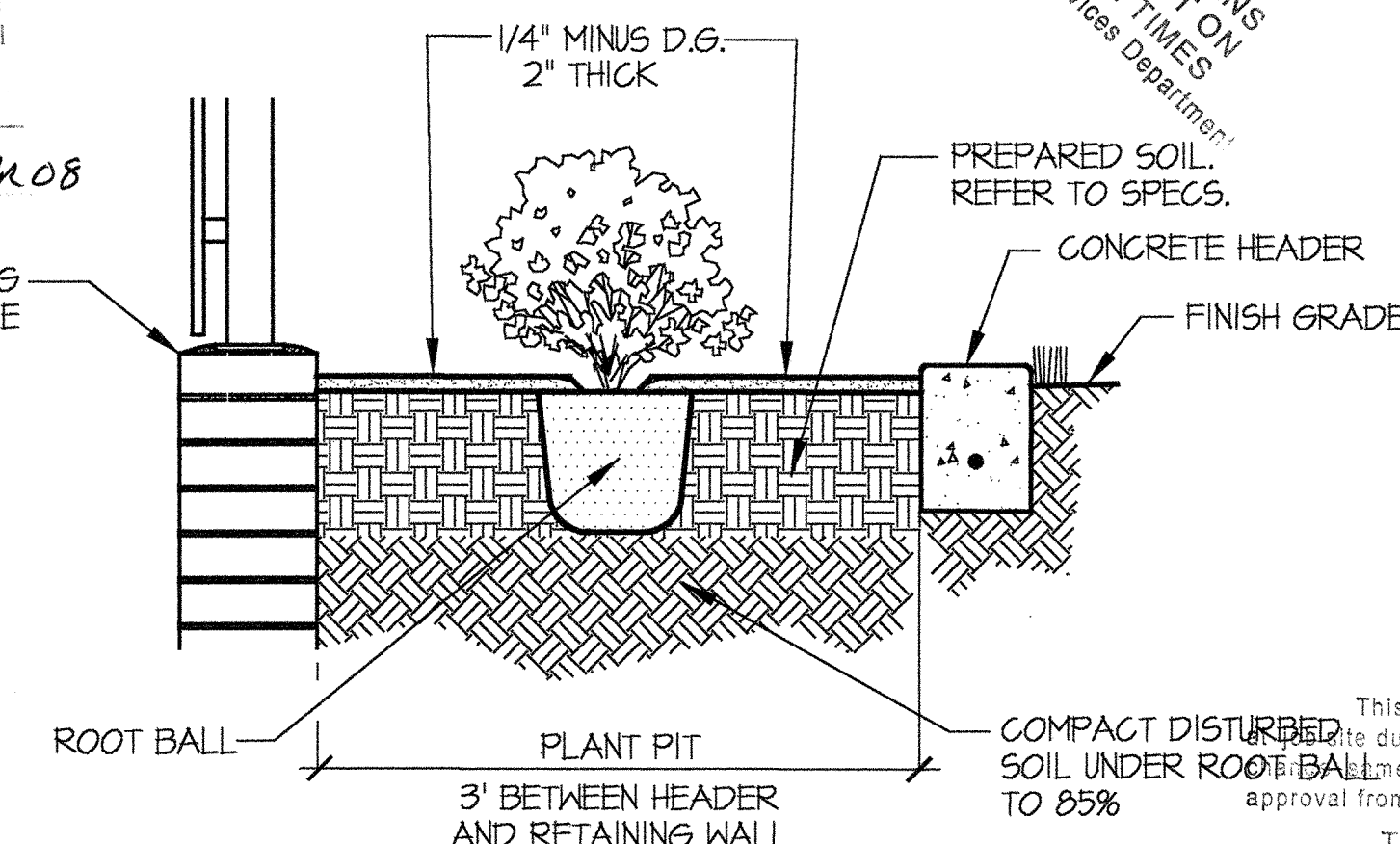


**KEYNOTES:**

- ① REPAIR TURF AREAS DISTURBED DURING CONSTRUCTION AND WHERE RAMP WAS REMOVED.
- ② INSTALL 2" THICK 1/4" MINUS DECOMPOSED GRANITE MULCH IN AREAS BETWEEN CONCRETE HEADER AND NEW RETAINING WALL AND IN THE TWO (2) PLANTERS FLANKING THE FRONT ENTRY STAIRS. COLOR TO BE SELECTED BY OWNER

CITY OF TUCSON  
USD / ZONING APPROVAL  
Site Plan ☐ Grading Plan ☐ Wall  
☐ Lot Split ☐ Sign ☐ HPZ  
☐ SCZ ☐ Other ☒ HPZ  
Additional comments as noted  
B. P. 14-14408

NEW RETAINING WALL & FENCE



① SHRUB PLANTING - ADD ALTERNATE 1  
SECTION

**PLANTING LEGEND - ADD ALTERNATE 1**

SYMBOL	SPECIES	QUANTITY	SIZE	NO. EMITTERS	GAL. PER HOUR
	Chrysactinia mexicana Damianita	13	5 GAL.	1	.5
	Leucophyllum candidum 'Thunder Cloud' Sage	20	5 GAL.	1	.5
	Muhlenbergia capillaris 'Regal Mist' Regal Mist Muhly	25	5 GAL.	1	1
	Nolina texana Sacahuista	10	5 GAL.	1	.5

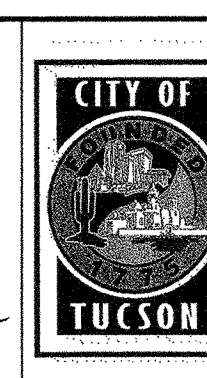
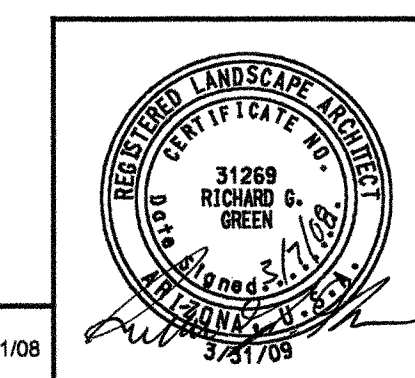
**NOTE: ALL CONCRETE HEADER, SHRUB PLANTING, IRRIGATION & D.G. IS ADD ALTERNATE 1.**

**ALL SLEEVING UNDER NEW PAVING FOR IRRIGATION IS PART OF THE BASE BID**

**APPROVED**  
This set of plans and specifications MUST be approved by the City of Tucson, Arizona, during construction. It is unlawful to alter or deviate therefrom, without written approval from the Development Services Department.  
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Electrical: \_\_\_\_\_ Date: \_\_\_\_\_  
Mechanical: \_\_\_\_\_ Date: \_\_\_\_\_  
Plumbing: \_\_\_\_\_ Date: \_\_\_\_\_  
DEVELOPMENT SERVICES DEPARTMENT, CITY OF TUCSON

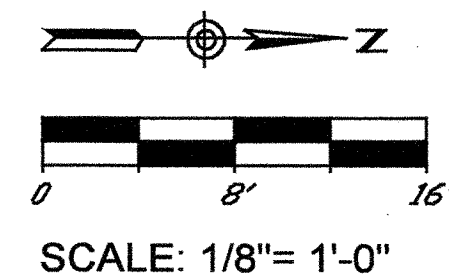
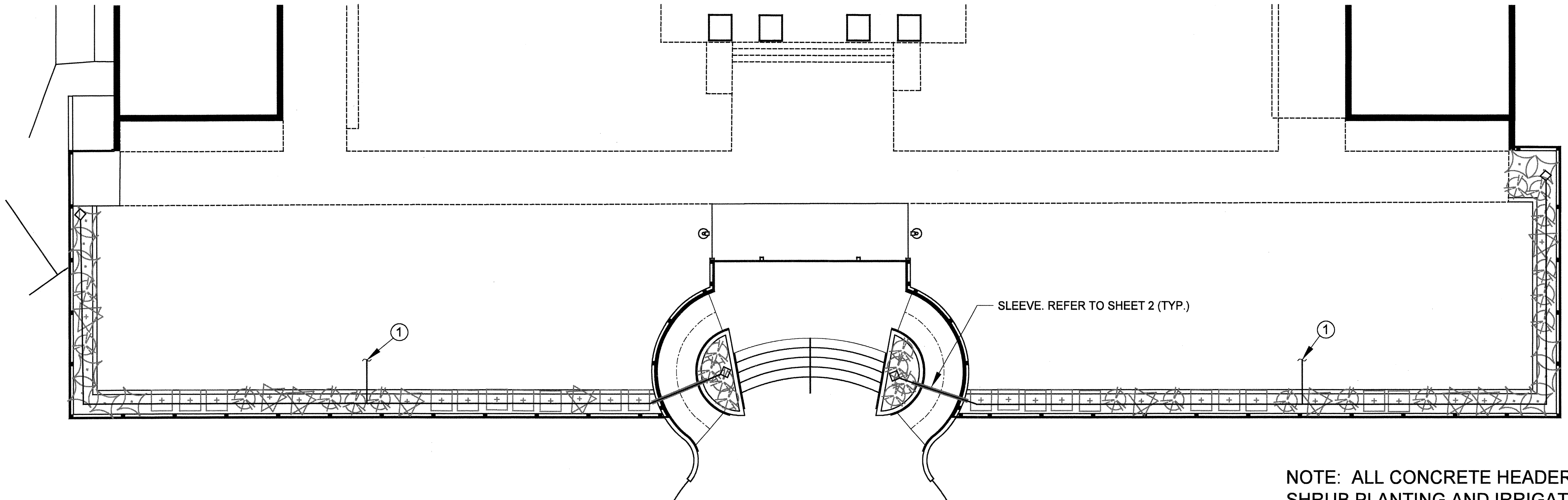
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442 NORTH SIXTH AVENUE TUCSON, AZ. 85708  
PHONE 520-884-7911 FAX 520-884-7912  
REV. NO. REV. DATE REVISION: DRAWN BY: RGG CHECKED BY: ES 1/21/08



City of Tucson, Parks and Recreation Department  
**ARMORY PARK/TUCSON CHILDREN'S MUSEUM**  
APPD BY: \_\_\_\_\_ 20 \_\_\_\_ REF: \_\_\_\_\_ SCALE: \_\_\_\_\_  
APPD BY: \_\_\_\_\_ 20 \_\_\_\_ PLAN NO.: \_\_\_\_\_  
**PLANTING PLAN - ADD ALTERNATE 1**





NOTE: ALL CONCRETE HEADER, SHRUB PLANTING AND IRRIGATION IS ADD ALTERNATE 1.

ALL SLEEVING UNDER NEW PAVING FOR IRRIGATION IS PART OF THE BASE BID

### IRRIGATION LEGEND

- 3/4" SCHED. 40 PVC LATERAL, 12" DEEP, TO MULTI-PORT EMITTER ASSEMBLIES
- ◇— FLUSHING END-CAP ASSEMBLY
- NOT SHOWN MULTI-PORT EMITTER ASSEMBLY
- 3" SCHED. 40 PVC SLEEVE

### KEYNOTES:

- ① CONNECT LATERAL TO EXISTING DRIP IRRIGATION SYSTEM

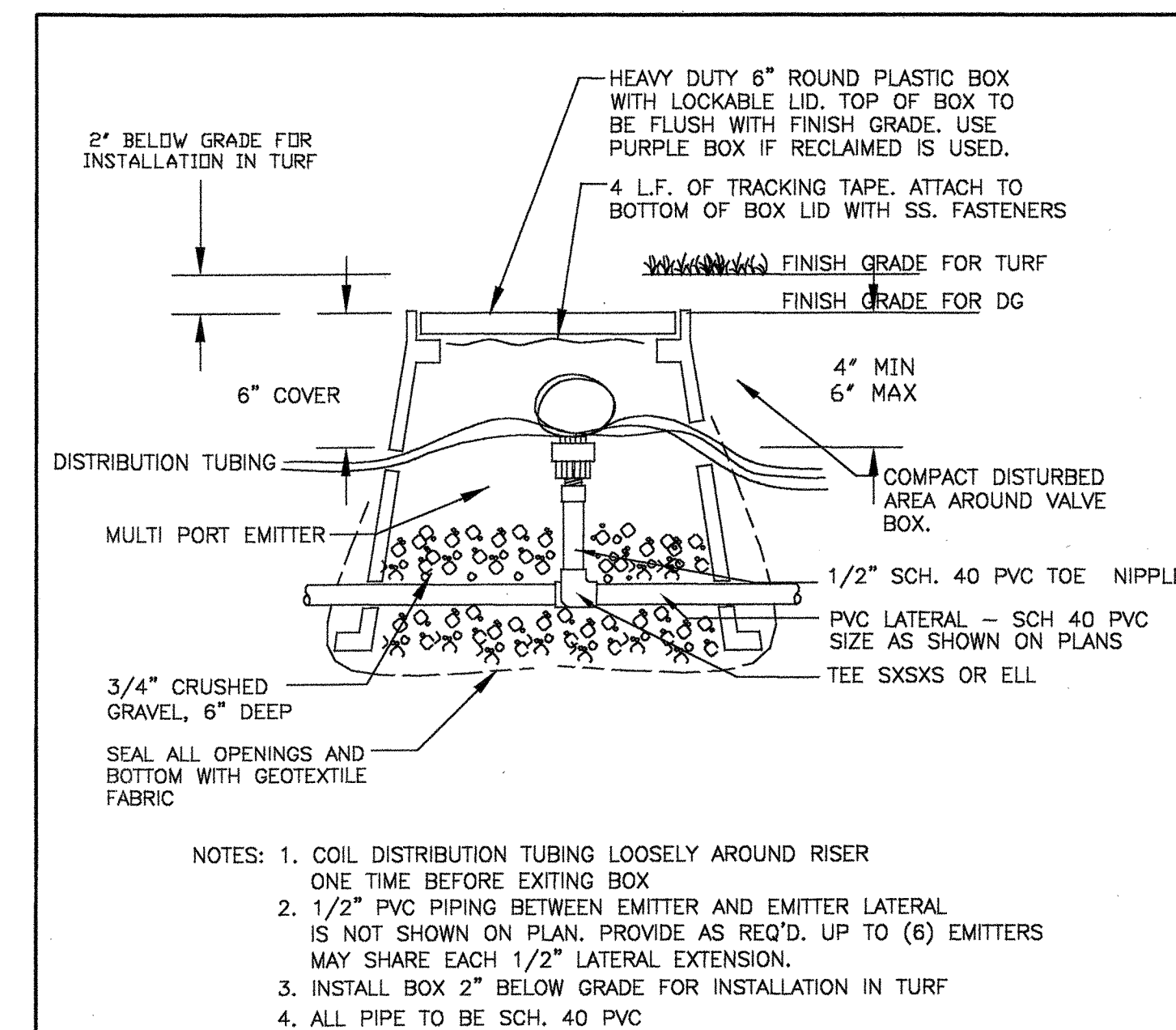
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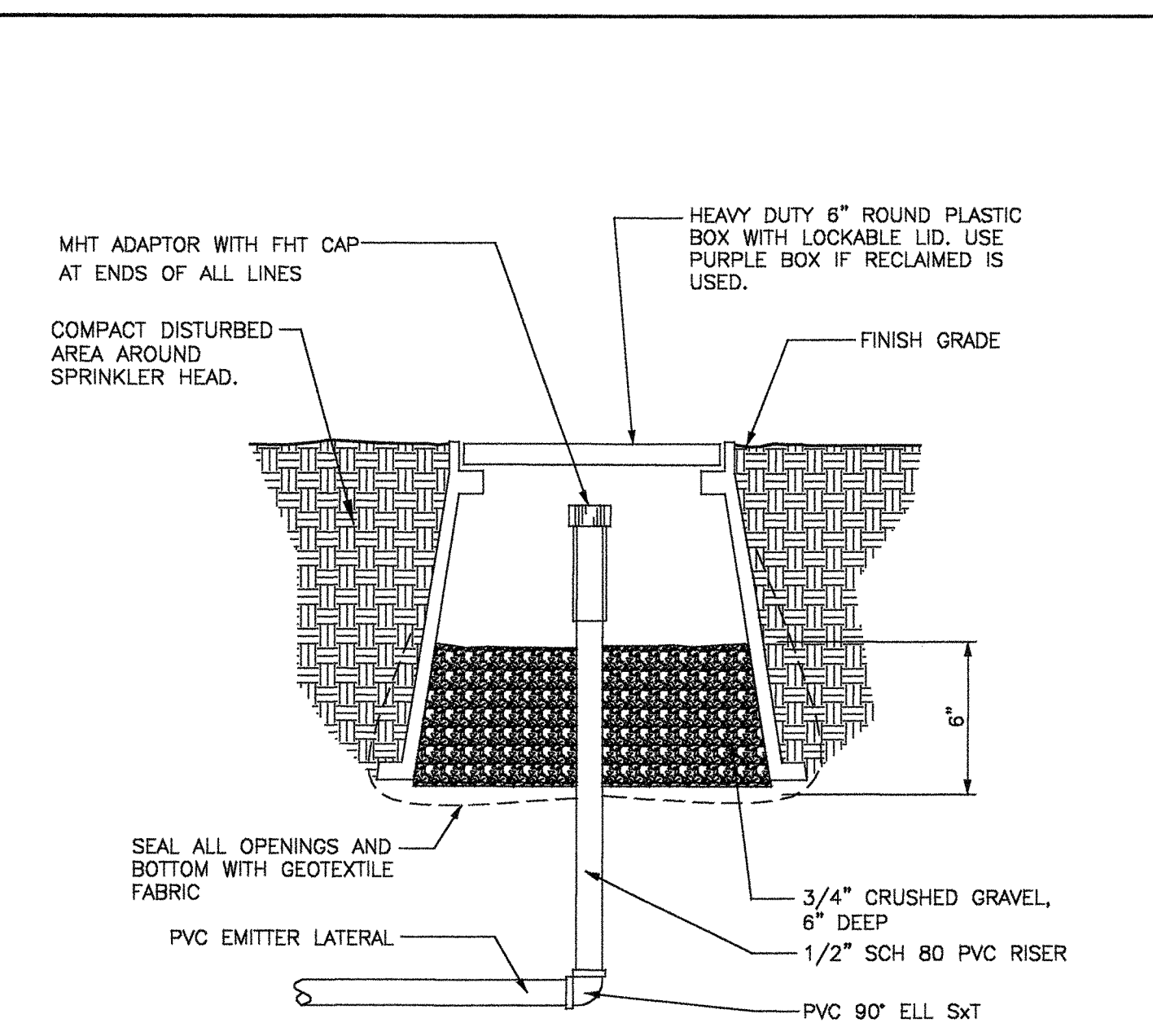
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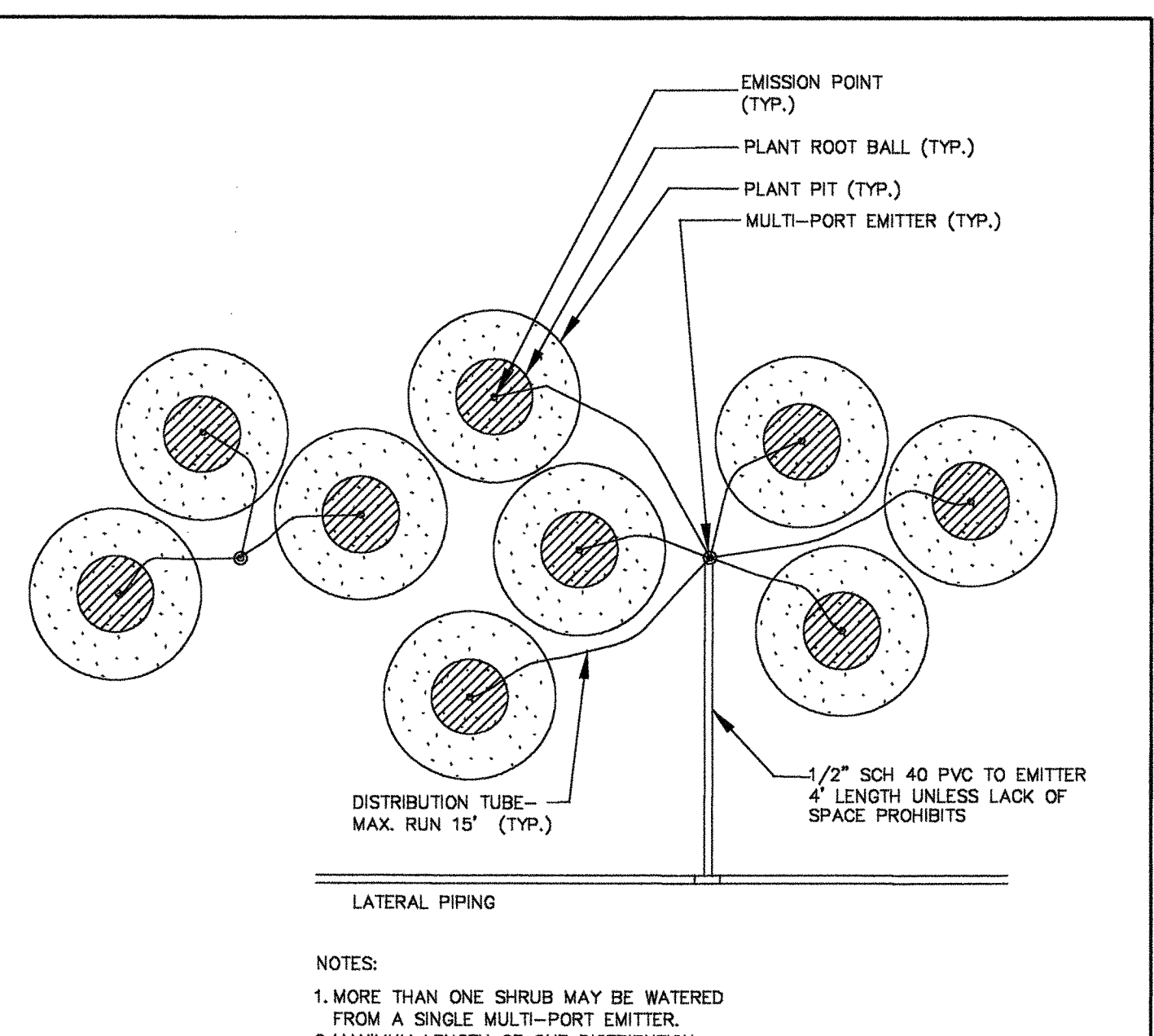
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15 MULTI-OUTLET EMITTER ASSEMBLY  
SCALE: N.T.S.



17 LATERAL END CAP  
SCALE: N.T.S.



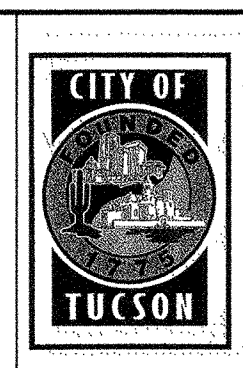
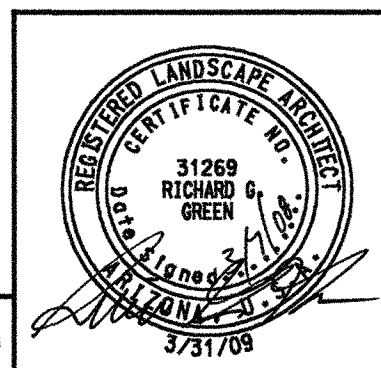
21 EMITTER LOCATION DETAIL-SHRUBS  
SCALE: N.T.S.

ISSUED:	STANDARD DETAIL	DETAIL NO.	ISSUED:	STANDARD DETAIL	DETAIL NO.	ISSUED:	STANDARD DETAIL	DETAIL NO.
REVISED:	LANDSCAPE IRRIGATION SYSTEM	15	REVISED:	LANDSCAPE IRRIGATION SYSTEM	17	REVISED:	LANDSCAPE IRRIGATION SYSTEM	21
	MULTI-OUTLET EMITTER ASSEMBLY	SHEET OF		LATERAL END CAP	SHEET OF		EMITTER LOCATION SHRUBS	SHEET OF

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ARMORY PARK/TUCSON CHILDREN'S MUSEUM

APPD BY: _____	20	REF: _____	SCALE: _____
APPD BY: _____	20	PLAN NO. _____	

IRRIGATION PLAN -  
ADD ALTERNATE 1



ELECTRICAL SYMBOLS AND ABBREVIATIONS LIST

SYMBOL	DESCRIPTION	MTG. HEIGHT
A <sub>2</sub>	LETTER INDICATES LUMINAIRE TYPE, NUMBER INDICATES BRANCH CIRCUIT	
	FLUORESCENT LUMINAIRE - RECESSED	
	FLUORESCENT LUMINAIRE - SURFACE MOUNTED	
	FLUORESCENT LUMINAIRE - PENDANT MOUNTED	
	INCANDESCENT, HID, OR PL LUMINAIRE (SURFACE MOUNTED) - ARROW INDICATES AIMING OF DIRECTIONAL, ACCENT OR WALL WASH LUMINAIRE	
	INCANDESCENT, HID, OR PL LUMINAIRE (RECESSED) - ARROW INDICATES AIMING OF DIRECTIONAL, ACCENT OR WALL WASH LUMINAIRE	
	WALL MOUNTED LUMINAIRE	
	EXIT LIGHT, DIRECTIONAL ARROWS AS INDICATED. SHADING INDICATES FACE	
	EMERGENCY LIGHT WITH BATTERY PACK AND 2 LAMP HEADS - SURFACE MOUNTED	
	LIGHT TRACK WITH LUMINAIRES AS INDICATED	
S <sub>a</sub>	SPST TOGGLE SWITCH - LOWER CASE LETTER INDICATES FIXTURES SWITCHED	48" TO BOTTOM
S <sub>3</sub>	THREE-WAY TOGGLE SWITCH	
S <sub>L</sub>	SPST TOGGLE SWITCH WITH LIGHTED HANDLE	
S <sub>M</sub>	MANUAL MOTOR STARTER SWITCH WITH OVERLOAD ELEMENT(S) - SIZE AS REQUIRED	
S <sub>D</sub>	DIMMER SWITCH (WATTAGE AS REQUIRED) - "LV" INDICATES LOW VOLTAGE	
	TIME CLOCK FOR LIGHTING CONTROL	
	DUPLEX GROUNDED RECEPTACLE	12" TO BOTTOM
	DUPLEX GROUNDED RECEPTACLE - SPLIT WIRED	
	DUPLEX RECEPTACLE MOUNTED HORIZONTAL	
	QUADRAPLEX GROUNDED CONVENIENCE RECEPTACLE	
	FLUSH MOUNTED DUPLEX FLOOR RECEPTACLE. CONTRACTOR SHALL MARK PROPOSED LOCATION IN FIELD AND COORDINATE EXACT FINAL LOCATION WITH ARCHITECT PRIOR TO ANY ROUGH-IN.	
	DISCONNECT SWITCH - SIZE, VOLTAGE AND NUMBER OF POLES AS NOTED OR AS REQUIRED	
	MOTOR STARTER - NUMBER INDICATES SIZE, SHADED QUADRANT INDICATES FURNISHED WITH EQUIPMENT	
	COMBINATION STARTER AND FUSED DISCONNECT SWITCH	
	ELECTRICAL BRANCH CIRCUIT PANELBOARD - SURFACE MOUNT SEE PANEL SCHEDULE DRAWING FOR ADDITIONAL INFORMATION	72" TO TOP
	ELECTRICAL BRANCH CIRCUIT PANELBOARD - RECESSED SEE PANEL SCHEDULE DRAWING FOR ADDITIONAL INFORMATION	
	TELEPHONE JACK	
	FLUSH MOUNTED FLOOR TELEPHONE OUTLET - COORDINATE EXACT FINAL LOCATION WITH ARCHITECT IN FIELD	
	DATA	

SYMBOL	DESCRIPTION	MTG. HEIGHT
	TELE/DATA OUTLET	12" TO BOTTOM
	CABLE TELEVISION OUTLET	
	MOTION DETECTOR	
	FIRE ALARM MANUAL PULL STATION	48" TO BOTTOM
	FIRE ALARM BELL	
	FIRE ALARM HORN	
	FIRE ALARM STROBE LIGHT	
	FIRE ALARM COMBINATION HORN/STROBE	
	SMOKE DETECTOR	
	HEAT DETECTOR	
	DUCT TYPE SMOKE DETECTOR	
	135 DEGREE F. RATE OF RISE HEAT DETECTOR	
	SPRINKLER SYSTEM TAMPER SWITCH	
	SPRINKLER SYSTEM FLOW SWITCH	
	KEY NOTE - NUMBER AS INDICATED	
	DASHED INDICATES EXISTING DEVICES	
	BRANCH CIRCUIT HOME RUN TO PANELBOARD (PANELBOARD AND CIRCUITS AS NOTED)	
	ACCESSIBLE JUNCTION BOX - SIZE AS REQUIRED	
— OHP —	OVERHEAD PRIMARY	
— UGE —	UNDERGROUND ELECTRICAL	
— OHT —	OVERHEAD TELEPHONE LINE	
— UGT —	UNDERGROUND TELEPHONE LINE	
— OHS —	OVERHEAD SECONDARY	
— UGS —	UNDERGROUND SECONDARY	

SYMBOL	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPS INTERRUPTING CAPACITY, RMS SYMMETRICAL
CATV	COMMUNITY ACCESS TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
(E), EXTG	EXISTING
G, GND, GRD	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
NL	NIGHT LIGHT
NIC	NOT IN CONTRACT
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OH	OVERHEAD
PNL	PANELBOARD
Sf	FUSESTAT HOLDER
TTB	TELEPHONE TERMINAL BOARD
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF
XFMR	TRANSFORMER

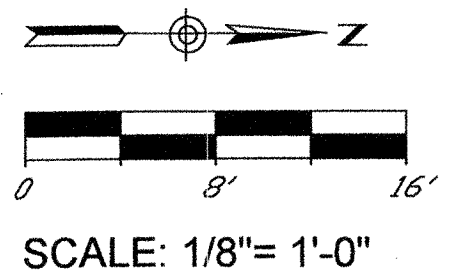
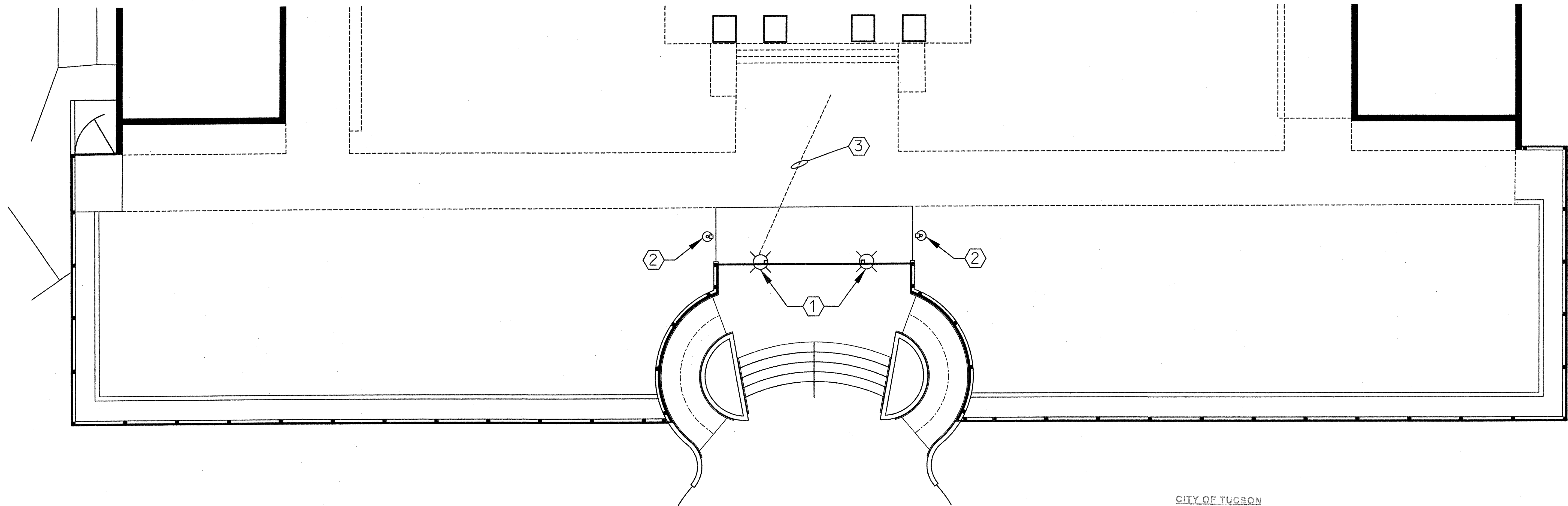
GENERAL NOTE

NOT ALL SYMBOLS AND ABBREVIATIONS INDICATED ARE NECESSARILY APPLICABLE TO THIS PROJECT.

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JOB AT ALL TIMES  
Development Services Department

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CITY OF TUCSON





CITY OF TUCSON  
 DSD / ZONING APPROVAL  
☐ Site Plan ☐ Grading Plan ☐ Wall  
☐ Lot Split ☐ Sign ☒ HPZ  
☐ SCZ ☐ Other HPZ 06-62  
 Additional comments as noted  
*P. Rodriguez* 14 MAR 08

# 1 ELECTRICAL LIGHTING DEMOLITION PLAN

## 1 KEYNOTES THIS SHEET:

- (2) EXISTING FLOOD STYLE FIXTURES MOUNTED ON TOPSIDE OF GATE AS SHOWN ON PRINT. CONTRACTOR TO REMOVE EXISTING FIXTURES FROM TOP OF GATE.
- NEW 10' POLE WITH NEW LUMINAIRE.
- EXISTING CONDUIT RUN. CONTRACTOR TO FIELD VERIFY LOCATION, INTERCEPT CONDUIT AND REUSE FOR NEW POLE LOCATIONS.

## GENERAL NOTES THIS SHEET:

- CONTRACTOR TO IDENTIFY LOCATION OF FEED FOR EXISTING FIXTURES (2) TOPSIDE OF GATE. CONTRACTOR TO RE-USE EXISTING CONDUIT FOR NEW POLE LOCATIONS.
- CONTRACTOR TO PULL NEW WIRE FROM CLOSEST EXISTING JUNCTION BOX.

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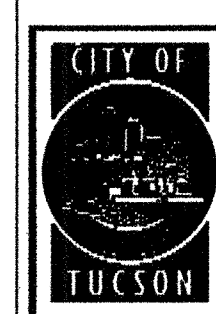
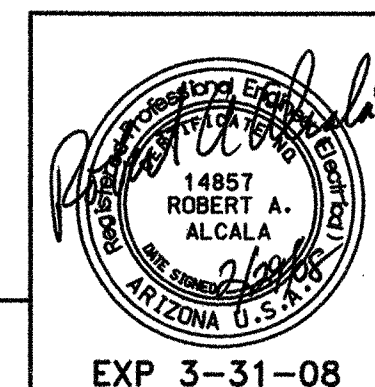
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**RAALCALA**  
 & Associates, Inc.  
 consulting electrical engineering  
 2660 N. Coyote Dr., Suite 103  
 Tucson, AZ 85745  
 (520) 823-7773  
 RAAI JOB#: 08013

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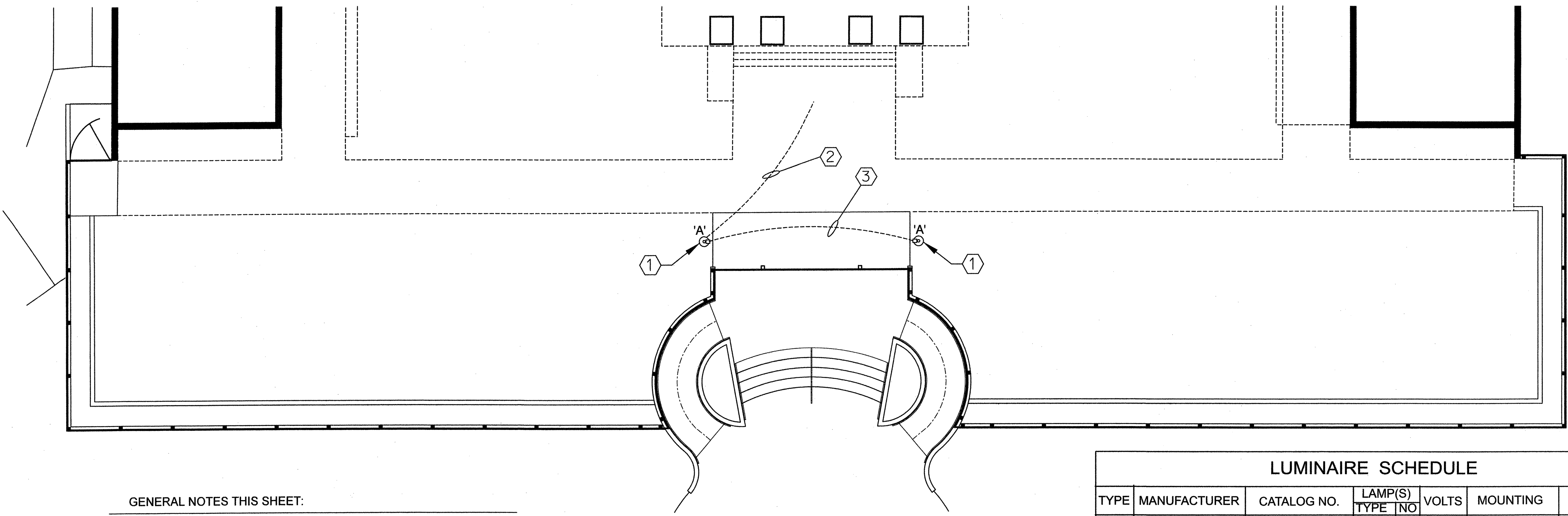
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APPD BY _____	20 ____	PLAN NO. _____	

ELECTRICAL PLAN  
 DEMOLITION

2  
 of  
 6

EXP 3-31-08





GENERAL NOTES THIS SHEET:

1. CONTRACTOR TO AVOID SAW CUTTING EXISTING SIDEWALK TO COMPLETE WORK.
2. CONTRACTOR TO INSTALL POLE PER MANUFACTURER'S SPECIFICATIONS AND REQUIREMENTS.
3. CONTRACTOR TO INSTALL NEW POLES EACH WITH INTEGRATED PHOTO EYE AND GFCI RECEPTACLE. PHOTO EYE SUPPLIED WITH LUMINAIRE.
4. COORDINATE ELECTRICAL UNDERGROUND WORK WITH THAT FOR THE RECONSTRUCTION OF THE ENTRY GATE AREA.

KEYNOTES THIS SHEET:

1. NEW 10' POLES WITH NEW TYPE 'A' LUMINAIRES. CONTRACTOR TO SUPPLY SET SCREWS LONG ENOUGH TO SECURE POST TOP LUMINAIRE TO TOP OF POLE. FURNISH AND INSTALL CYLINDRICAL SPACERS AS MAY BE REQUIRED FOR UNIFORM FIT. CONTRACTOR TO FURNISH GFCI IN WEATHERPROOF BOX ON BASE OF POLE.
2. EXISTING CONDUIT RUN. CONTRACTOR TO FIELD VERIFY LOCATION AND INTERCEPT FOR USE WITH NEW POLES AND LUMINAIRES. CONTRACTOR TO RE-PULL NEW WIRE IN EXISTING CONDUIT FROM NEAREST EXISTING JUNCTION BOX OR PANEL. REFERENCE GENERAL NOTE 1 THIS SHEET.
3. NEW 3/4" PVC CONDUIT INSTALLED 24" BELOW FINISHED GRADE OR 12" BELOW CONCRETE IF APPLICABLE.

ELECTRICAL LIGHTING PLAN

LUMINAIRE SCHEDULE

TYPE	MANUFACTURER	CATALOG NO.	LAMP(S)		VOLTS	MOUNTING	REMARKS
			TYPE	NO			
'A'	ANTIQUE STREET LAMPS	DS10K-70SMED -ACS-TY5-TB1 -PEB1-ANBK	70W HPS	1	120V	POLE	PHOTOEYE ON LUMINAIRE FROM FACTORY
	ANTIQUE STREET LAMPS	M012-10-S4-ANBK-RSP					10' POLE

NOTE:

- ALL BALLASTS SHALL BE (HPF) HIGH POWER FACTOR.
- CONTRACTOR SHALL VERIFY ALL CATALOG LUMINAIRE NUMBERS WITH MANUFACTURER REPRESENTATIVE PRIOR TO BID AND PRIOR TO PURCHASE OF LUMINAIRES.
- FIXTURES ARE OR EQUAL BY LITHONIA AND THOMAS LIGHTING.
- LIGHT FIXTURES ARE TO BE INSTALLED BY ELECTRICAL CONTRACTOR PER 2005 NEC CODE AND ANY OTHER LOCAL REQUIREMENTS
- ELECTRICAL CONTRACTOR TO PROVIDE J-BOXES WITH MOUNTING PLATES AS REQUIRED FOR CUSTOM/SPECIALTY LIGHTING. GENERAL CONTRACTOR TO PROVIDE BACKING AND SUPPORTS AS REQUIRED.
- WATTAGES SHOWN ARE MAXIMUM ALLOWABLE.
- PROVIDE 10% SPARE LAMPS OR A MINIMUM OF 2 EACH, TO OWNER AT CLOSE OF PROJECT.
- PROVIDE POINT BY POINT CALCULATION FOR ENTIRE SITE UPON SUBMITTAL FOR APPROVAL.
- PROVIDE STRUCTURAL CALCULATIONS FROM AN ARIZONA REGISTERED ENGINEER FOR POLE BASES UPON SUBMITTAL OF POLE FOR APPROVAL.

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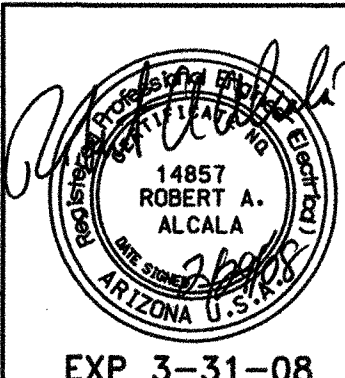
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ELECTRICAL PLAN  
NEW CONSTRUCTION



OUTDOOR LIGHTING CALCULATION

THE OUTDOOR LIGHTING CALCULATION IS IN ADHERENCE WITH THE CITY OF TUCSON/PIMA COUNTY OUTDOOR LIGHTING CODE.

- 1. PROJECT IS IN LIGHTING AREA E3
- 2. SITE IS ZONED FOR COMMERCIAL.
- 3. ALL NEW LUMINAIRES ARE FULL CUT OFF.
- 4. ALLOWABLE UNSHIELDED LUMENS PER TABLE 5.1, E3 COMMERCIAL (OPTION 2) (300,000 LUMENS PER ACRE)
- 5. TOTAL ACRES FOR THIS PROJECT SITE IS .132 ACRES.
- 6. 300,000 LUMENS x .132 ACRE = 39,683 TOTAL ALLOWABLE LUMENS.
- 7. OUTDOOR LUMINAIRES USED THIS PROJECT.

TYPE	QUANTITY	LAMP	LUMENS/LAMP	TOTAL LUMENS
AREA	2	70W HPS	5500	11,000
TOTAL				11,000

- 8. 11,000 TOTAL LUMENS.
- 9. LINE 8 IS LESS THAN LINE 6. (MEETS CODE REQUIREMENTS).

INTERNATIONAL ENERGY CONSERVATION CODE

LUMINAIRE	DESCRIPTION	BALLAST TYPE	LAMP & BALLAST WATTS	# LAMPS PER LUMINAIRE	LUMINAIRE QUANTITY	LUMINAIRE WATTAGE
'A'	POST TOP	ELECTRONIC	100W	1	2	200W

TOTAL = 200 WATTS

TOTAL AREA = 6000 SQ. FT.  
TOTAL SQ FT = 6000 X 1W/SQFT = 6000 WATTS  
TOTAL WATTS + 1.05% 202 WATTS

AREA COMPLIES WITH TABLE 505.6.2 OF 2006 IECC.

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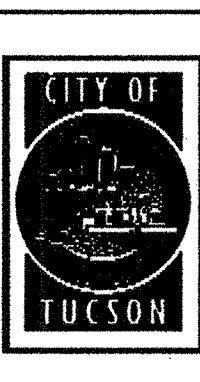
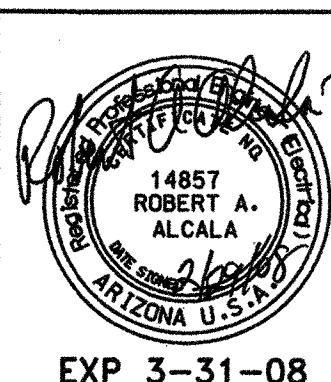
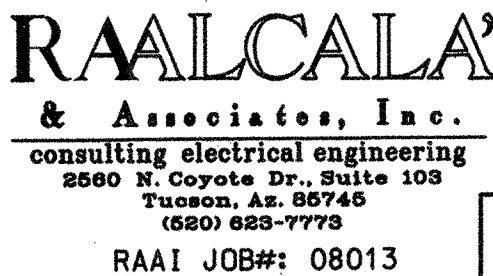
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City of Tucson, Parks and Recreation Department		4 of 6
ARMORY PARK/TUCSON CHILDREN'S MUSEUM		
APPD BY _____ 20 ____	REF _____ SCALE _____	ELECTRICAL CALCULATIONS
APPD BY _____ 20 ____	PLAN NO. _____	



# ELECTRICAL SPECIFICATIONS

(CONTINUED ON NEXT SHEET)

## 1.0 GENERAL

- A. ALL WORK SHALL COMPLY WITH THE 2005 PUBLISHED EDITION OF THE NATIONAL ELECTRICAL CODE & AMENDMENTS, AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION, AND RULES AND REGULATIONS OF ANY UTILITY COMPANIES SERVING THE FACILITY OR PROPERTY ALONG WITH ALL ADOPTED OWNERS STANDARDS AS APPLICABLE. WHERE CONTRACT DOCUMENTS EXCEED THESE REQUIREMENTS, THE CONTRACT DOCUMENTS SHALL GOVERN. IN NO CASE SHALL ANY WORK BE INSTALLED CONTRARY TO, OR BELOW, MINIMUM LEGAL STANDARDS. ANY DISCREPANCY BETWEEN THE CONTRACT DOCUMENTS AND THESE CODES, RULES AND REGULATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING THE PROJECT OR ANY WORK ON THE ITEM IN QUESTION.
- B. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING AND CONSTRUCTION. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING, ORDERING OF EQUIPMENT OR CONSTRUCTION.
- C. ALL EQUIPMENT SHALL BE NEW, PURCHASED SPECIFICALLY FOR THE PROJECT, BE U.L. LISTED FOR THE ENVIRONMENT IN WHICH INSTALLED AND BE DELIVERED TO THE JOB SITE IN THE ORIGINAL MANUFACTURERS APPLICATION AND SHIPPING CONTAINERS. ALL ELECTRICAL EQUIPMENT, FUSES, WIRE ETC., WITHIN THE SAME CATEGORY SHALL BE OF THE SAME MANUFACTURER.
- D. ELECTRICAL CONTRACTOR IS SPECIFICALLY RESPONSIBLE FOR COORDINATING THE FURNISHING AND INSTALLATION OF COMPONENTS FOR THIS PROJECT WITH THE GENERAL CONTRACTOR AND MECHANICAL CONTRACTOR PRIOR TO BIDDING THE PROJECT. ELECTRICAL CONTRACTOR SHALL BE SPECIFICALLY RESPONSIBLE FOR FURNISHING AND INSTALLING THESE ITEMS AND THEIR ASSOCIATED CONDUIT, WIRING AND INTERCONNECTS UNLESS SPECIFICALLY RELIEVED OF THE RESPONSIBILITY.
- E. CONTRACTOR SHALL SUBMIT MANUFACTURERS LITERATURE FOR ALL ELECTRICAL EQUIPMENT UPON REQUEST. THE SUBMITTAL SHALL BE SIX COPIES AND INCLUDE COMPLETE DESCRIPTIONS OF THE EQUIPMENT, DIMENSIONS, U.L. LISTINGS AND APPLICABLE ELECTRICAL RATINGS. PRIOR APPROVALS MUST BE SUBMITTED FOR WRITTEN APPROVAL.
- F. COORDINATE SERVICE OUTAGES WITH CONSTRUCTION REPRESENTATIVE.
- G. ALL SURPLUS, EXCAVATED MATERIAL SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THIS CONTRACTOR.
- H. UNDER NO CIRCUMSTANCES SHALL ANY OPEN TRENCHES BE COVERED WITH FILL WITHOUT THE APPROVAL OF THE OWNER.
- I. UPON COMPLETION OF PROJECT, CONTRACTOR SHALL PROVIDE OWNER WITH A REPRODUCIBLE SET OF "AS-BUILT" DRAWINGS INDICATING ANY AND ALL VARIATIONS FROM THE CONTRACT DRAWINGS ALONG WITH A SIGNED LETTER STATING THAT THE PROJECT FULLY COMPLIES WITH ALL CONTRACT DRAWINGS AND IF NOT, HOW INSTALLATION WAS ACCOMPLISHED. AS-BUILT INFORMATION RECORDED ON THE CONTRACT DRAWINGS SHALL BE OF THE SAME QUALITY, AND TO THE SATISFACTION OF THE OWNER, COPIES OF BOTH THE "AS-BUILT" DRAWINGS AND LETTER SHALL BE SUBMITTED TO THE ENGINEER FOR RECORD.
- J. CONTRACTOR SHALL WARRANTY ENTIRE PROJECT FOR 12 MONTHS FROM THE DATE OF FINAL ACCEPTANCE.

## 2.0 WIRING

- A. ALL 600 VOLT WIRING SHALL BE STRANDED COPPER, THHN/THWN, FOR ALL CIRCUITING EXCEPT FOR POWER DISTRIBUTION FEEDERS WHICH SHALL BE STRANDED COPPER TYPE XHHW UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- B. MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS NOTED OTHERWISE ON THE DRAWINGS. USE #10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS LONGER THAN 100 LF.
- C. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. RECOMMENDED WIRE PULLING TENSIONS, TAKING INTO ACCOUNT CONDUIT SIZE, CONDUIT BENDS AND WIRE LAY, SHALL NOT BE EXCEEDED.
- D. ALL WIRING SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND NO SPLICES SHALL BE MADE EXCEPT IN APPROVED JUNCTION BOXES. WIRING SHALL BE INSTALLED IN A COMPLETE CONDUIT SYSTEM UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- E. WIRING TO BE COLOR CODED AS FOLLOWS: 240V SINGLE PHASE 3 WIRE NEUTRAL-WHITE PHASES A-BLACK, B-RED, GROUND-GREEN. 208 V THREE PHASE 4 WIRE NEUTRAL-WHITE, PHASES A-BLACK, B-RED, C-BLUE, GROUND-GREEN OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
- F. SPLIT BOLT CONNECTORS ARE NOT PERMITTED. USE ONLY UL LISTED COMPRESSION TYPE CONNECTORS FOR SPLICES 600 V AND LESS.
- G. ALL UNDERGROUND SPLICES UP TO 600 V SHALL BE WRAPPED AND COATED WITH AN APPROVED WEATHERPROOF SEALANT.
- H. THE USE OF MC OR ROMEX CABLE IS NOT APPROVED.

## 3.0 CONDUIT

- A. ALL CONDUITS FOR SYSTEMS 600V AND BELOW, SHALL BE GALVANIZED EMT OR IMC IN DRY CONCEALED LOCATIONS UNLESS NOTED OTHERWISE ON THE DRAWINGS. MINIMUM SIZE CONDUIT SHALL BE 3/4". EXCEPTION OF SWITCH LEGS AND LOW VOLTAGE CONTROL CIRCUITS.
- B. ALL CONDUITS SHALL BE GALVANIZED IMC OR GRS IN EXTERIOR LOCATIONS ABOVE GRADE OR WHERE EXPOSED TO PHYSICAL DAMAGE.
- C. SCHEDULE 40 PVC CONDUIT SHALL BE USED UNDERGROUND EXTERIOR TO BUILDING FOUNDATIONS. USE SCHEDULE 80 PVC WHERE REQUIRED BY SERVING UTILITY COMPANIES.
- D. UNDERGROUND CONDUIT SWEEPS INSTALLED FOR TRANSFORMERS SHALL BE FACTORY RIGID ELL'S. CONCRETE ENCASE SWEEPS WHERE REQUIRED BY THE SERVING UTILITY COMPANIES.
- E. CONNECTORS FOR EMT AND IMC CONDUITS SHALL BE STEEL COMPRESSION TYPE FOR CONDUITS 2" AND SMALLER AND SET SCREW TYPE FOR 2 1/2" AND LARGER, SUPPORTED WITH APPROVED HANGERS. DIE-CAST FITTINGS NOT PERMITTED.
- F. ALL PVC CONDUIT CONNECTIONS SHALL BE MADE WITH MANUFACTURER'S RECOMMENDED GLUE, SEALER AND CONNECTORS.
- G. CONDUITS SHALL RUN PARALLEL TO ALL BUILDING WALLS AND BE SUPPORTED EVERY SEVEN FEET MINIMUM AND WITHIN 2 FEET OF ALL CONNECTIONS, OUTLETS AND BOXES.
- H. ALL EMPTY CONDUITS SHALL BE FURNISHED WITH PULL STRINGS AND TAGGED AT BOTH ENDS.
- I. ALL CONDUITS IN FINISHED AREAS SHALL BE RUN CONCEALED UNLESS APPROVED IN WRITING BY ENGINEER.
- J. CONDUIT ENTERING PULLBOXES SHALL TERMINATE A MINIMUM OF ONE INCH INSIDE THE BOX WALL.
- K. CONDUIT ENDS SHALL BE CAPPED WITH CONDUIT END CAP FITTINGS UNTIL WIRING IS STARTED. WHEN END CAPS ARE REMOVED, ENDS SHALL BE PROVIDED WITH AN APPROVED CONDUIT END BELL. END BELLS SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF THE CONDUCTORS. APPROVED INSULATED GROUNDING BUSHINGS SHALL BE USED ON STEEL CONDUIT ENDS.
- L. CONDUITS IN PROTECTED AREAS SUCH AS BEHIND CURBS, IN SIDEWALKS, ETC., THAT ARE NOT SUBJECT TO ANY VEHICULAR TRAFFIC SHALL BE AT A MINIMUM DEPTH OF 24 INCHES FOR CIRCUITS 600 V OR LESS AND 60" FOR POWER COMPANY HIGH VOLTAGE CIRCUITS. SECONDARY CONDUITS INSTALLED UNDER ROADWAYS, DRIVEWAYS, OR ANY OPEN AREAS WHERE IT IS POSSIBLE FOR VEHICLES TO DRIVE AND CONDUITS WITH CONDUCTORS THAT HAVE VOLTAGE LESS THAN 600 VOLTS, SHALL BE AT A MINIMUM DEPTH OF 36 INCHES. WHEN CONDUIT IN PROTECTED AND OPEN AREAS CANNOT BE INSTALLED AT THE MINIMUM DEPTH, IT SHALL BE ENCASED IN THREE-INCH CONCRETE ENVELOPE (MIN).

## 3.0 CONDUIT (CONTINUED)

- M. UNDERGROUND CONDUIT SHALL BE CLEANED, BLOWN OUT WITH COMPRESSED AIR, AND MANDRELLED TO REMOVE ANY OBSTRUCTIONS.
- N. ALL CONDUITS AND FITTINGS SHALL BE LISTED BY UL, AND CONFORM TO NEC STANDARDS. UNLESS OTHERWISE SPECIFIED, ALL CONDUIT TO BE INSTALLED UNDERGROUND SHALL BE RIGID POLYVINYL CHLORIDE (PVC) NON-METALLIC TYPE CONFORMING TO THE REQUIREMENTS OF UL 651 FOR RIGID NON-METALLIC CONDUIT. PVC CONDUIT AND FITTINGS SHALL BE SCHEDULE 40, HEAVY WALL, MANUFACTURED FROM HIGH IMPACT MATERIAL AND SHALL BE RATED FOR USE AT 90 DEGREES CENTIGRADE.
- O. PVC DUCT DESIGNED FOR DIRECT BURIAL INSTALLATION WITHOUT CONCRETE ENCASEMENT SHALL COMPLY WITH ONE OF THE FOLLOWING STANDARDS: CONDUIT MARKED "EPC-40-PVC," CONDUIT MARKED "SCHEDULE 40 PVC TC-2."
- P. CONDUIT RUNS SHOWN ON THE PLANS SHALL BE CHANGED TO AVOID UNDERGROUND OBSTRUCTIONS ONLY WHEN DIRECTED BY THE OWNER'S REPRESENTATIVE.
- Q. CONTRACTOR MAY, AT HIS OPTION AND EXPENSE, USE A LARGER SIZE CONDUIT THAN SPECIFIED PROVIDED THE LARGER SIZE IS CONTINUOUS FOR THE ENTIRE LENGTH OF THE RUN FROM OUTLET TO OUTLET. REDUCING COUPLINGS WILL NOT BE PERMITTED. CHANGES IN THE LOCATION AND SIZE SHOWN ON THE PROJECT PLANS SHALL BE DOCUMENTED BY THE CONTRACTOR AND SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL.
- R. IF A TRENCH HAS TO BE LEFT OPEN OVERNIGHT, A MINIMUM OF SIX INCHES OF BACKFILL MATERIAL SHALL BE USED AS A PROTECTIVE COVER TO ELIMINATE CONTRACTION OF THE CONDUIT SYSTEM. THE BACKFILL MATERIAL SHALL BE REMOVED BY THE CONTRACTOR UPON REQUEST IF FINAL INSPECTION HAS NOT BEEN MADE.
- S. ANY OBSTRUCTIONS TO THE TRENCHING OPERATIONS SUCH AS EXISTING IMPROVEMENTS, UTILITIES, IRRIGATION DITCHES, STRUCTURES, BUILDINGS, FOUNDATIONS, AND PROPERTY MARKERS ARE TO BE PROTECTED FROM DAMAGE BY THE CONTRACTOR DURING CONSTRUCTION AND UNTIL COMPLETION OF WORK. IN THE EVENT OF DAMAGE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR/REPLACEMENT AT HIS EXPENSE WITH MATERIALS AND METHODS LEAVING THE DAMAGED ITEMS IN AS GOOD OR BETTER THAN THE ORIGINAL CONDITION.
- T. BACKFILL CONTAINING LARGE ROCK (OVER  $\pm 1 \frac{1}{2}$ " DIAMETER), PAVING MATERIALS, CINDERS, LARGE OR SHARPLY ANGULAR SUBSTANCE, OR CORROSIVE MATERIAL, SHALL NOT BE PLACED IN AN EXCAVATION WHERE MATERIALS MAY DAMAGE RACEWAYS, CABLE, OR OTHER SUBSTRUCTURES OR PREVENT ADEQUATE COMPACTION OF FILL OR CONTRIBUTE TO CORROSION OF RACEWAYS, CABLES OR OTHER SUBSTRUCTURES.
- U. WHERE NECESSARY TO PREVENT PHYSICAL DAMAGE TO THE RACEWAY OR CABLE, PROTECTION SHALL BE PROVIDED IN THE FORM OF GRANULAR OR SELECTED MATERIAL, SUITABLE RUNNING BOARDS, SUITABLE SLEEVES, OR OTHER APPROVED MEANS.
- V. ALL PVC CONDUIT SHALL BE STORED AND HANDLED IN AN APPROVED MANNER TO MINIMIZE ULTRAVIOLET DETERIORATION DUE TO EXPOSURE TO SUNLIGHT.
- W. CONDUIT FOR FUTURE USE SHALL HAVE POLYTWINE INSTALLED IN THE CONDUIT WITH AT LEAST TWO FEET OF POLYTWINE DOUBLED BACK INTO THE CONDUIT AND CAPPED.
- X. OPEN TRENCH EXCAVATION ACROSS AN EXISTING ROADWAY SHALL NOT BE PERMITTED WITHOUT THE WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE. JACKING AND DRILLING PITS SHALL BE KEPT TWO FEET CLEAR OF THE EDGE OF THE PAVEMENT.
- Y. ALL CONDUIT AND FITTINGS TO BE INSTALLED ABOVE GROUND SHALL BE THE RIGID METAL TYPE MANUFACTURED OF GALVANIZED STEEL CONFORMING TO REQUIREMENTS OF UL 6 FOR RIGID METALLIC CONDUIT OR INTERMEDIATE METALLIC CONDUIT. NON-THREADED COUPLINGS SHALL NOT BE USED. PVC-COATED (40 MIL) RIGID GALVANIZED STEEL CONDUIT OR 20 MIL HALF LAPPED GALVANIZED RIGID STEEL, SHALL BE USED IN CONCRETE STRUCTURES UNLESS OTHERWISE SPECIFIED.
- Z. FLEXIBLE STEEL CONDUIT SHALL BE USED IN RUNS FROM ADJACENT JUNCTION BOXES TO MOTORS, AND IN LOCATIONS WHERE, FOR STRUCTURAL OR OTHER REASONS, IT IS IMPRACTICAL TO USE STEEL TUBE AND WHERE APPROVED BY THE ARCHITECT. IN THESE CASES, THE FLEXIBLE CONDUIT SHALL BE AMERICAN BRASS "SEALTITE FLEXIBLE", OR COLUMBIA "FLEX-SEAL", TYPE UA WITH APPLETON FLEXIBLE FITTINGS SERIES ST OR EQUAL KELLUM.
- AA. CONDUIT ENTRANCES AT BACK BOXES/PULLBOXES ARE TO HAVE NYLON BUSHINGS.
- AB. SURFACE MOUNTED CONDUIT RUNS 1" AND LARGER ARE TO BE SUPPORTED WITH TWO HOLE STRAPS ON C-CHANNEL/UNISTRUT UNLESS APPROVED BY OWNERS REPRESENTATIVE.
- AC. NON-METALLIC CONDUIT FITTINGS EXPOSED ABOVE GROUND ARE NOT PERMITTED.

## 4.0 WIRING DEVICES

- A. SWITCHES ARE TO QUIET TYPE, SPECIFICATION GRADE, 20 AMP, 120/277 VOLT AND INSTALLED AT 48" ABOVE FINISHED FLOOR.
- B. RECEPTACLES SHALL BE GROUNDING TYPE, SPECIFICATION GRADE, BACK OR SIDE WIRED, TWO-POLE, THREE-WIRE, 20 AMP 125 VOLT, DUPLEX INSTALLED AT 18" ABOVE FINISHED FLOOR MEASURED TO THE TOP OF BACK BOX.
- C. COVER PLATES SHALL BE STAINLESS STEEL. PLATES IN EXPOSED WIRING SHALL BE STEEL WITH CORNERS TRIMMED WITH EDGE OF BOX. COVER PLATES IN MECHANICAL, ELECTRICAL ROOMS, TUNNELS, CRAWL SPACES AND SIMILAR UNFINISHED AREAS SHALL BE GALVANIZED STEEL OF THE UTILITY TYPE.
- D. JUNCTION BOXES SHALL BE GALVANIZED CODE GAGE STEEL OF A TYPE AND SIZE TO SATISFY THE SPECIFICATIONS AND REQUIREMENTS AT EACH OUTLET BUT NOT LESS THAN 4 INCHES SQUARE AND 1-1/2 INCH DEEP. BELL BOXES SHALL BE USED IN THE EXPOSED WIRING IN THE BUILDING, AND WHERE EXPOSED TO WEATHER. PROVIDE PLASTER RINGS WHERE REQUIRED. CONDUIT TO LAY-IN FIXTURES AND FOR MOTORS SHALL BE FLEXIBLE STEEL. (6 FOOT MAXIMUM).

## 5.0 OUTLET BOXES

- A. FOR LOCAL SWITCH OUTLETS USE 4 INCH SQUARE BOXES WITH SWITCH PLASTER RINGS FOR ONE OR TWO GANGS, AND SPECIAL GANG BOXES WITH GANG COVER FOR MORE THAN TWO SWITCHES.
- B. FOR CONVENIENCE OUTLETS, SWITCH, TELEPHONE, AND INTERCOMMUNICATION SYSTEM OUTLETS, USE 4 INCH SQUARE OR LARGER, PRESSED STEEL BOXES WITH PLASTER RINGS. HANDY BOXES NOT LESS THAN 2 INCHES DEEP, 2-1/4 INCHES WIDE AND 4 INCHES LONG MAY BE USED IF ONLY ONE CONDUIT ENTERS. CONDUIT SHALL ENTER THE TOP ONLY OF THE HANDY BOXES.

## 6.0 LIGHTING FIXTURES

- A. CATALOG NUMBERS ON THE LIGHTING FIXTURE SCHEDULE AND HEREIN ARE FOR THE PURPOSE OF INDICATING THE GENERAL TYPE, QUALITY, AND SIZE OF FIXTURES THAT WILL BE REQUIRED EXCEPT WHEN NOTED "NO EQUAL".
- B. INCLUDE A LIGHTING FIXTURE FOR EVERY LIGHT OUTLET SHOWN. IF THE TYPE OF LIGHTING FIXTURE IS NOT SPECIFICALLY NOTED, PROVIDE WITHOUT EXTRA COST TO THE OWNER, A LIGHTING FIXTURE OF THE SAME TYPE CALLED FOR UNDER A SIMILAR CONDITION ELSEWHERE ON THE CONTRACT DRAWINGS.
- C. ALL LIGHTING FIXTURES SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH LOCAL BUILDING CODES AND DIRECTIVES BY THE NFPA AND SHALL BEAR THE LABEL OF APPROVAL OF THE U.L.
- D. FLUORESCENT BALLASTS SHALL BE ELECTRONIC TYPE.
- E. FIXTURES SUPPLIED BY THE OWNER AT THE SITE ARE TO BE INSTALLED, CONNECTED, CLEANED AND LAMPED BY ELECTRICAL.
- F. LIGHTING FIXTURES SHALL BE OF THE SAME TYPE INCLUDING ALL FIXTURES REPRESENTED BY A SINGLE FIXTURE TYPE DESIGNATION BUT OBVIOUSLY INTENDED TO MATCH EACH OTHER SHALL BE THE PRODUCT OF THE SAME MANUFACTURER. THE DECISION OF THE ENGINEER REGARDING THE ACCEPTABILITY OF ANY FIXTURE SHALL BE FINAL.
- G. ALL NEW LIGHTING FIXTURES SHALL NOT HAVE ANY FOAM TAPE OR SIMILAR MATERIAL ANYWHERE IN, OR ON THE FIXTURE.

## 7.0 LAMPS

- A. PROVIDE LAMPS FOR EACH FIXTURE. LAMPS SHALL BE MANUFACTURED BY SYLVANIA.
- B. PROVIDE PILOT, ANNUNCIATOR AND OTHER MISCELLANEOUS LAMPS FOR PRODUCTS FURNISHED AS PART OF THE ELECTRICAL WORK.
- C. FLUORESCENT LAMPS F32 T8, 3500K COLOR TEMPERATURE RANGE, AS MANUFACTURED BY SYLVANIA, PHILLIPS OR GENERAL ELECTRIC.

## 8.0 LUMINAIRE LOCATIONS

- A. PRIOR TO INSTALLING LUMINAIRES OUTLETS EXAMINE THE PLANS OF OTHER TRADES IN ORDER TO CONFORM TO ALL OF THE FOLLOWING CONDITIONS:
  1. LOCATE LUMINAIRES TO CONFORM WITH REFLECTED CEILING PLANS INCLUDED IN THE CONTRACT DRAWINGS.
  2. LUMINAIRES SHALL NOT CONFLICT WITH THE INSTALLATION OF DOORS OR CABINETS.
  3. LUMINAIRES OUTLETS SHALL BE ACCESSIBLE AND FIXTURES SHALL HANG CLEAR OF DUCTS AND PIPING. VERIFY EXPOSED DUCT AND PIPING LOCATIONS PRIOR TO ROUGH-IN OF ELECTRICAL OUTLETS. ADJUST OUTLET LOCATIONS TO COORDINATE WITH DUCTS AND PIPING.
  4. A SEPARATE GROUNDING CONDUCTOR SHALL BE PROVIDED FROM THE BRANCH CIRCUIT WIRING TO THE INDIVIDUAL FIXTURES, AND TO EACH SUBSEQUENT FIXTURE IN THE ROW.

## 9.0 JUNCTION AND PULL BOXES

- A. PULLBOXES SHALL BE INSTALLED IN ALL CONDUIT RUNS WHEREVER INDICATED, AND WHERE NECESSARY, IN ORDER TO FACILITATE THE PULLING OF WIRES OR CABLES. ALL JUNCTION AND PULLBOXES SHALL BE GALVANIZED AND CONSTRUCTED WITH SUITABLE BARRIERS SEPARATING THE DIFFERENT SYSTEMS. BOXES SHALL BE PROVIDED WITH REMOVABLE COVERS, SECURED WITH MACHINE SCREWS. ALL JUNCTION AND PULLBOXES OF UNUSUAL SIZE OR SHAPE, AND AS DIRECTED, SHALL BE PROVIDED WITH INTERIOR ANGLE IRON BRACES, AND PROPER SUPPORTS.
- B. PROVIDE A JUNCTION BOX ACCESSIBLE AND CLOSE TO ALL RECESSED FIXTURES.
- C. PORTLAND CEMENT CONCRETE PULLBOXES SHALL CONFORM TO THE REQUIREMENTS FOR CLASS B CONCRETE. WHEN REQUESTED, PULLBOXES, COVERS, AND EXTENSIONS, SHALL BE FURNISHED FOR TESTING AT THE CONTRACTOR'S EXPENSE.
- D. IN-GROUND PULLBOXES, COVERS, AND EXTENSIONS SHALL BE INSTALLED AND LOCATED AS SHOWN ON THE PROJECT PLANS AND SHALL BE THE SIZE SPECIFIED. ALL COVERS SHALL HAVE A MINIMUM OF FOUR (4) BRASS HOLD DOWN BOLTS. BOXES WITH MULTIPLE RUNS SHALL HAVE DIVIDERS.
- E. COVERS SHALL BE PROVIDED AND SHALL BE MARKED AS FOLLOWS: "ELECTRICAL" OR "COMMUNICATIONS" AS APPLICABLE.

## 10.0 DISCONNECTS (MOTOR AND CIRCUIT)

- A. ALL DISCONNECTS SHALL BE NEMA STANDARD AND INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS COMPLETE WITH ALL FUSES, LUGS, CONNECTORS, ETC., RATED FOR THE LOAD SERVED AND ENVIRONMENT IN WHICH INSTALLED OR AS INDICATED ON THE DRAWINGS. PROVIDE HEAVY DUTY SWITCHES FOR 277/480V RATED SYSTEMS.
- B. MECHANISM: HEAVY-DUTY, QUICK-MAKE, QUICK-BREAK, WITH VOIDABLE INTERLOCK TO PREVENT OPENING ENCLOSURE IN "ON" POSITION. EXTERNAL LOCKABLE HANDLE OPERATION WITH PROVISION FOR PADLOCKING.
- C. ALL SWITCHES FOR MOTORS SHALL BE HP RATED. ALL SWITCHES SHALL HAVE NEMA 1 ENCLOSURES. APPROVED MANUFACTURERS: GENERAL ELECTRIC SQUARE D ITE
- D. PROVIDE "S" TYPE FUSE HOLDER COMPLETE WITH PILOT LIGHT AND SINGLE POLE TOGGLE SWITCH FOR ALL FRACTIONAL HORSEPOWER MOTORS THAT ARE NOT SELF-PROTECTS. APPROVED MANUFACTURERS: BUSS AND BELL
- E. DISCONNECTING DEVICES, WHEN NOT INCLUDED WITH ELECTRICALLY-OPERATED EQUIPMENT FURNISHED UNDER OTHER SECTION OF SPECIFICATIONS SHALL BE PROVIDED UNDER THIS SECTION.

RATINGS: VOLTAGE, AMPACITY, HORSEPOWER AND INDUCTIVE RATINGS COMPLYING WITH POWER SOURCE VOLTAGE AND CHARACTERISTICS OF LOAD CONTROLLED.
- F. PROVIDE THE NUMBER OF POLES NECESSARY TO INCLUDE A POLE FOR EACH UNGROUNDED CONDUCTOR. EQUIPMENT SWITCH WITH NEUTRAL TERMINAL POINT WHERE NEUTRAL IS PRESENT. DO NOT SWITCH NEUTRAL UNLESS INDICATED.

APPROVED PLANS  
MUST BE KEPT ON  
JOB AT ALL TIMES  
Development Services Department

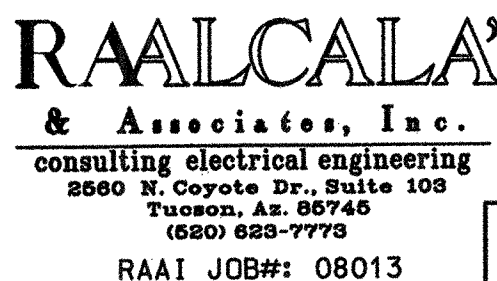
### APPROVED

This set of plans and specifications MUST be at job site during construction. It is unlawful to alter or change same, or deviate therefrom, without written approval from the Development Services Department.

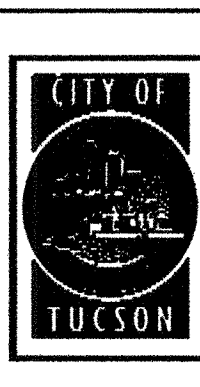
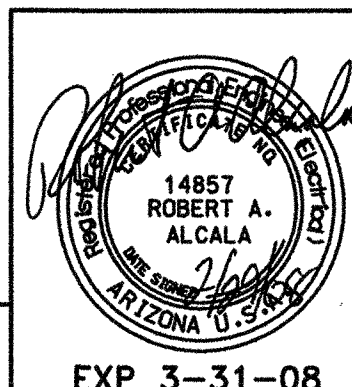
The stamping of this set of plans & specifications SHALL NOT be held to permit or to be an approval of the violation of any provisions of City Ordinance or State Law

Structural: Rtm Date: 3-24-08  
Electrical: \_\_\_\_\_ Date: \_\_\_\_\_  
Mechanical: \_\_\_\_\_ Date: \_\_\_\_\_  
Plumbing: \_\_\_\_\_ Date: \_\_\_\_\_

DEVELOPMENT SERVICES DEPARTMENT,  
CITY OF TUCSON



REV. NO.	REV. DATE	REVISION



City of Tucson, Parks and Recreation Department  
ARMORY PARK/TUCSON CHILDREN'S MUSEUM

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APPD BY _____	20 _____	REF _____	SCALE _____
APPD BY _____	20 _____	PLAN NO. _____	

ELECTRICAL  
SPECIFICATIONS